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Gleanings *in* Bee Culture



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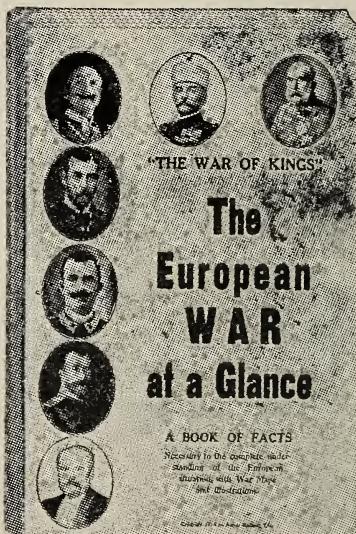
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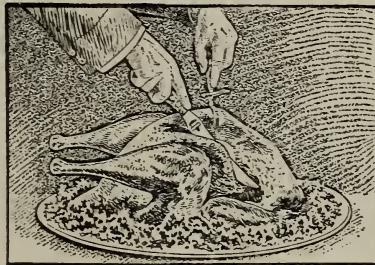
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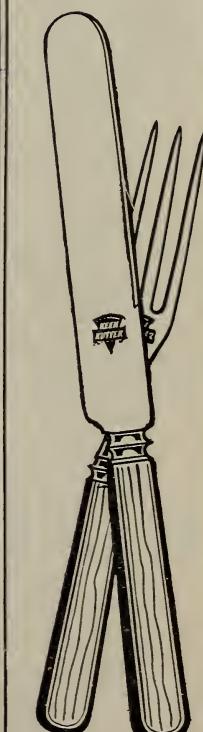
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HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

NATIONAL BEEKEEPERS' ASSOCIATION GRADING RULES

Adopted at Cincinnati, Feb. 13, 1913.

Sections of comb honey are to be graded: First, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I. FINISH.

1. *Extra Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. *Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white, and not more than six unsealed cells on either side exclusive of the outside row.

3. *No. 1*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. *No. 2*.—Comb not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

II. COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III. WEIGHT.

1. *Heavy*.—No section designated as heavy to weigh less than fourteen ounces.

2. *Medium*.—No section designated as medium to weigh less than twelve ounces.

3. *Light*.—No section designated as light to weigh less than ten ounces.

In describing honey, three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example: Fancy, white, heavy (F-W-H); No. 1, amber, medium (1-A-M), etc. In this way any of the possible combinations of finish, color, and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour or "weeping" honey; sections with comb projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than ten ounces.

HONEY-GRADING RULES ADOPTED BY THE COLORADO STATE BEEKEEPERS' ASSOCIATION, DECEMBER 13, 1911.

FANCY WHITE.—Sections to be well filled, comb firmly attached to all sides and evenly capped except the outside row next to the wood. Honey, combs, and cappings white, and not projecting beyond the wood; wood to be well cleaned; no sections in this grade to weigh less than 13½ ounces.

No. 1.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey white or very slightly off color. Combs not projecting beyond the wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

CHOICE.—Sections to be well filled; combs firmly attached; not projecting beyond the wood, and entirely capped, except the outside row next to the wood. Honey, comb, and cappings from white to amber, but not dark; wood to be well cleaned; no section in this grade to weigh less than 12 ounces.

No. 2.—This grade is composed of sections that are entirely capped, except row next to wood, weighing from ten to twelve ounces or more; also of such sections that weigh 12 ounces or more, and have not more than 50 uncapped cells all together, which must be filled. Combs and cappings from white to amber in color, but not dark; wood to be well cleaned.

EXTRACTED HONEY.—Must be thoroughly ripened, weigh 12 pounds per gallon. It must be well strained, and packed in new cans. It is classed as white, light amber, and amber.

STRAINED HONEY.—This is honey obtained from combs by all other means than the centrifugal extractors, and is classed as white, light amber, amber, and dark; it must be thoroughly ripened and well strained. It may be put up in cans that previously have contained honey.

ALBANY.—Honey demand is good. We quote fancy white, 18; good, 17; medium, 16; mixed and buckwheat, 15; extracted, white, 8½ to 9; off color, 7½ to 8; buckwheat, 7 to 7½.

Albany, Oct. 21.

H. R. WRIGHT.

INDIANAPOLIS.—The market for both comb and extracted honey is not as brisk as it might be, particularly comb. There is a fair demand for extracted. We quote No. 1 to choice white at \$3.50 to \$4.00 per case; best white extracted in 60-pound cans, 9½ to 10½ cents; California sage, 10 to 11 cents. Beeswax brings 30 cents cash, 32 in trade.

Indianapolis, Oct. 19. WALTER S. PODER.

Honey reports continued on page 5.

PERFECTION IN WAX RENDERING

has been reached by our process. Ship us your OLD COMB AND CAPPINGS, and secure highest returns. . . . Write for prices and full information.

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"The Busy Bee Men"

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We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in new unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—5 per cent for cash orders sent in November, the discount lessening one per cent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices has as yet been announced, and you may, therefore, order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

If your season's crop of honey is not yet disposed of, we can give you a good price and handle it promptly. Send samples of extracted and full information as to containers, flavor, quantity, price, etc. We also handle comb honey.

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Gleanings in Bee Culture

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ZANESVILLE.—At present the supply of honey on this market about balances the demand. While the crop locally was very light, the deficiency is for the most part made up by fair yields elsewhere. Best grades of white comb wholesale at 18 to 20, prices being one to two cents less in a jobbing way. Best white extracted is quoted at 9 to 11, according to quantity. Producers are offered for beeswax 30 cts. cash, 32 in exchange for supplies.

Zanesville, Oct. 19. EDMUND W. PEIRCE.

KANSAS CITY.—The supply of both comb and extracted honey is liberal and the demand fair. We quote No. 1 white comb honey, 24-section cases, at \$3.10 to \$3.25; No. 2 ditto, \$2.75 to \$3.00; No. 1 amber, \$3.00; No. 2 amber, \$2.50 to \$2.75; chunk honey, 60-lb. cans, per lb., 10 cts.; white extracted honey, 8 to 8½; amber ditto, 7 to 7½; dark ditto, 5 cts.; beeswax, 25 to 28.

C. C. CLEMONS PRODUCE CO.

Kansas City, Oct. 15.

NEW YORK.—We quote fancy clover, comb, per lb., 16; ditto No. 1, 14; ditto No. 2, 12 to 13; ditto extracted, 8 to 9; ditto buckwheat, comb, 10 to 12; buckwheat, extracted, 7½ to 8; Southern, extracted, per gallon, 50 to 80; West Indian, extracted, per gallon, 45 to 50. A quotation of 30 to 32 cts. per lb. for beeswax covers the business doing in average fine domestic goods. West Indian is offering down to 27 cts. per lb.

New York, Oct. 19. JOURNAL OF COMMERCE.

ST. LOUIS.—The demand for honey in this market has been only fair, as the weather conditions have been much against its consumption. Colder weather will stimulate the trade and cause a better demand. There are no changes from our last quotations. We are still quoting No. 1 white-clover honey, 24 sections to the case, from \$3.35 to \$3.50; No. 2 at \$3.00 to \$3.25; light amber from \$2.50 to \$3.00; extracted honey, from 5 to 7½, according to quality, flavor, and quantity. Beeswax is quoted at 30 for prime; inferior and impure, less.

R. HARTMANN PRODUCE CO.

St. Louis, Oct. 21.

NEW YORK.—Owing to the short crop of comb honey in the Eastern States, receipts thus far have been rather light; but, on the other hand, the demand is not up to former years. Some far-western honey is coming into our market, and is selling at 14 to 16 cents according to quality; dark and lower grades at from 10 to 12. As for extracted honey, there is not much doing in white clover or linden; but quantities of California and Western are arriving to offset the shortage here. We quote white, 8½ to 9; light amber, 7 to 8; lower grades, 6 to 7, all according to quality. Large quantities of West Indian honey are arriving right along, and take the place of domestic in a good many instances on account of the low price. We would advise our Southern shippers not to make any shipment at all until they correspond with us. Beeswax has been declining right along, and we quote domestic at from 28 to 30 for choice quality; and foreign, principally West India, at from 25 to 27.

New York, Oct. 19. HILDRETH & SEGELKEN.

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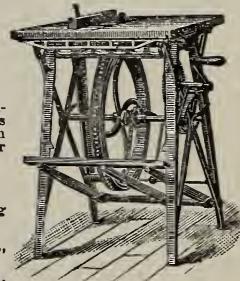
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If you need honey, write us. We have several kinds of the choicest in barrels or cans. State quantity you wish to buy. Comb honey in wood cases; fine quality.

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is in the hands of The A. I. Root Co., Medina, O., and we will be glad to receive orders now for next season's supplies. Discount for November, 5 per cent; for December, 4 per cent. Any special goods needed by beekeepers of New York State should be in our hands just as soon as possible.

The A. I. Root Company Syracuse, New York

Queens - Queens Bees by the Pound and Full Colonies

From a superior strain of THREE-BANDED ITALIANS. . . . Hardy, gentle, and they are hustlers. . . . Guaranteed to please you.

Send for My 1914 Descriptive Catalog

I have a large stock of modern BEE SUPPLIES always on hand. ROOT'S GOODS at factory schedule of prices, packed and delivered to my station. All orders will receive prompt and careful attention.

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HONEY-JARS No. 25 jars, \$4.60 a gross; 5 gross, \$4.25 per gross. Our catalog lists several styles. Heavy cartons that protect honey, \$5.00 per M. Extracted honey, 8 to 10½ per pound. Bees and queens at all seasons.

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PRACTICE

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We are in the market for honey, particularly white-clover comb. Write, stating quantity, how packed, and price wanted.

If your own crop is light or has been sold, and you are needing honey for your trade, your wants can here be supplied at reasonable prices.

The correspondence of wholesale and retail dealers is solicited.

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22 South Third Street.

These Experts Have a Hand in All the Lewis Beware You Buy Is This Worth Any Thing to You?

When You Consider Buying Bee Supplies, Ask Yourself These Questions
WHERE CAN I BUY (NOT THE MOST) THE BEST FOR MY MONEY?
WHAT KIND OF MATERIAL WILL I GET?
WHAT SORT OF WORKMANSHIP WILL BE FURNISHED?
HOW WILL THESE GOODS BE PACKED?
WHO ARE MAKING AND STANDING BACK OF THESE GOODS?
WHAT ARE THEIR FACILITIES FOR DISTRIBUTION?

HERE IS THE ANSWER:

THE G. B. LEWIS COMPANY HAS BEEN IN THE BUSINESS OF MANUFACTURING BEE SUPPLIES FOR FORTY-ONE YEARS. IT HAS GROWN FROM CARPENTER SHOP TO A PLANT COVERING NEARLY SIX ACRES OF GROUND WITH AN ANNUAL OUTPUT OF 30,000,000 SECTIONS AND 100,000 HIVES. During all these years, in the face of advancing prices on material and labor, the scarcity of suitable lumber, competition of cheaper and inferior goods, it has had many opportunities to cheapen its product at the expense of quality; BUT IT HAS STEADFASTLY STOOD BY IT'S GUNS, MAINTAINING ONE STANDARD OF QUALITY AND WORKMANSHIP. LEWIS BEEWARE is the same to-day, was the same yesterday, and will be the same to-morrow.

NOW, HOW ABOUT THE WORKMANSHIP IN THESE GOODS? What skill do they represent? In a word, what is their personality? The business has been under one management, and the lumber has been bought by one buyer for twenty years. He is still managing the business and buying the lumber. The head mechanic came into the factory when a boy. He has been supervising for thirty-six years. The Bee-hive superintendent has been devoting his life to making Bee-hives for thirty years. The Section boss has been watching the Lewis section machinery and output for twenty-nine years. These men represent the skill, the brains, and the conscience that go in the goods. We ask you again—DOES THIS MEAN ANY THING TO YOU?

A WORD ABOUT LEWIS PACKING. The Lewis Company also makes a business of packing boxes; therefore they know how goods should be packed. A patent woven wood-and-wire package, made only by the Lewis Company is employed largely in packing. This makes the package light, compact, and damage-proof.

WHO IS BACK OF THESE GOODS? THE LEWIS COMPANY has for forty-one years stood back of every transaction it has ever made. On examination of Lewis goods, if they are not as represented, you are not asked or expected to keep them. This is our guarantee, and applies to Lewis distributing houses as well as the factory. The Lewis Company has a reputation for fair and square dealing second to none.

LEWIS BEEWARE may be obtained almost at your own door. Thirty distributing houses located at convenient points throughout the United States and foreign countries are there to serve you.

OUR 1915 CATALOG WILL BE READY FOR DISTRIBUTION AT THE USUAL TIME. Send for one, giving name of distributor nearest you.

G. B. LEWIS COMPANY, WATERTOWN, WIS., U. S. A.
 Manufacturers of Lewis Beware

A Letter in "Japanese-English" as It Came to Us

Mino, Japan, Aug. 31, 1913.

DADANT & SONS, Hamilton, Ill., U. S. A.

Gentlemen.—Widely is known the matchlessly excellent quality of your foundation. This can amply be testified by the various experiments I have made in the course of this year, and also by the many testimonials of those who, having been supplied with the same by my apiary, have already made experiments upon it.

It is indeed an Ideal Foundation, and this can not be blamed of an exaggeration when I take into consideration the astounding rapidity with which bee-combs are built out of it. Hoping your further success I remain, Sirs,

Truly Yours, K. MIDZUNO.

Comb Foundation, Bee-supplies, Honey, Beeswax.
 Sweet-clover Seed, etc. Old Comb, Cappings, Slumgum rendered
 into Beeswax on shares, and Beeswax worked into foundation.

DADANT & SONS
HAMILTON, ILLINOIS.

Gleanings in Bee Culture

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EDITORIALS

Honey Exhibit at Connecticut Fair

PARTICULAR attention is called to the report of the honey and bee department at the Hartford, Ct., fair, by E. G. Carr, page 846. There may be larger exhibits, but we do not know of a State in the Union where the beekeepers have a better opportunity than in Connecticut; and in this connection it should be observed that some one deserves a great deal of credit in working out these plans and in making possible the offering of prizes to the extent of \$500.

Exhibits like this one at fairs go a long way toward creating that favorable impression toward honey that is so necessary for its universal use by every family. After all, it is largely a matter of publicity. Many people do not eat honey, simply because it is not brought before them, and they do not think about it.

Our Cover Picture; the Windmill of Olden Days

OUR cover picture for this issue, as explained under Our Homes, p. 872, shows the original windmill which A. I. Root used as his only source of power to turn the wheels of his little beehive shop back in the days when GLEANINGS was in its infancy. As indicated by the picture, the mill is now owned by a farmer living near Medina and is at rest after its long years of useful activity.

It was a warm day in August when this photo was taken; and as A. I. Root himself stood before the camera and looked toward the old mill, we observed that his eyes would constantly seek the ground at his feet. It was hard for him to believe that nearly half a century had passed, and no doubt he saw again this wonderful machine of the air, resplendent in its new shining paint, when it was the realization of his fondest dreams—when it harnessed the wind and worked at his bidding. If he had voiced his thoughts he would probably have said, "Can it be that 40—yes, almost 50—years have come and gone?"

The years have come and gone. The mill, once so strong and powerful has been idle

for many years, while a newer one near by does the work. But A. I. Root is as busy as at any time in his life; and while his work has changed, and he has given up in a measure much of the real responsibility that he once bore alone, he is always active, as one would find who tried to follow him during any one of his never idle days. For him there will not come a time when, like this windmill, he will be of no more use to the world. His call to a newer, larger service in the other world will come as an anticipated interruption to some work here not yet finished.

A Quicker and Simpler Way of Making Chaff Division-boards

PRACTICALLY all who have tried chaff division-boards agree that they are invaluable for early spring breeding and for preparing a colony for winter; but the great objection to their use is the difficulty in putting together. They are quite expensive if bought already put together, and more expensive still if bought in the flat and put together afterward, for it takes pretty rapid work to assemble even three of them in an hour by the old plan, which consisted of tacking a strip of canvas around the frame and then stuffing it through slots cut in the bottom-bar. Besides the nailing of the wooden part, fifty small tacks had to be driven through the canvas into the frame, which is not a short job for even a rapid workman; and then the stuffing outside the two end-bars and under the bottom-bar through the slots required at least ten minutes more. We have recently made up a large lot of these division-boards for our own use by a little different plan, and we have found that a large amount of time is saved, and that the finished board has several important advantages over the old type.

The drawing on page 866 gives the whole plan in a nutshell. Drive six nails in a plain bottom-bar, as shown in Fig. 1, and then nail on the upright as in Fig. 2. The side boards, Fig. 3, are of such a length

that they lap over outside the end-bars and bottom-bar about $\frac{1}{4}$ inch. After nailing on the side bars the space between may be filled with packing in the usual way. Secure a strip of canvas the right length and width. We use a piece $4\frac{1}{2}$ in. wide and $42\frac{1}{4}$ in. long. Sew the edges together on a sewing-machine, making a long canvas tube. A large number of these may be sewed in a very few minutes. Fill these with sawdust through a large funnel, as in Fig. 4, the lower end of the tube being held shut by a weight placed over it on the floor. Stretch the tube around the frame, Fig. 5, letting it lie snugly in the groove formed by the projection of the side boards. Fold the unstuffed ends of the tube neatly over the top of the frame and secure by nailing on the top-bar, Fig. 6. One or two nails should be driven through the cushion up into the bottom-bar to prevent sagging in the middle.

The packing in the old-style division-board often matted down so that the cushion effect was all but lost, the peculiar advantage of the padded end then being lost. By this new construction it is possible to work the padding with the fingers so that it is again soft and flexible. We have found that these division-boards fit the hive much better, but they are no harder to remove.

What Makes Bees, that are Normally Gentle, Cross?

In our last issue, page 813, our old correspondent, J. D. Fooshe, who has not written much for GLEANINGS of late, but who has had a very wide experience, writes on this subject. When he says that bees are most erratic creatures in the matter of deportment on different days he is absolutely right. Of course, old experienced bee-keepers know that bees are crosser during the chilly hours of the morning or night than they are during the middle of the day when it is warm. Beginners learn this to their sorrow sometimes. But the thing that we have noticed that will make bees crosser than almost any thing else is the sudden cessation of a heavy honey-flow or an abrupt stoppage of the supply of honey, or syrup, in a robbing rampage. We commonly say that robbing makes bees cross. There will be no trouble so long as the supply of food holds out; but just the minute the owner removes the supply, there is something doing. The same principle operates in precisely the same way during a natural honey-flow from basswood or buckwheat that are both heavy yielders of nectar. The cessation may be due to a rain or to the natural closing of the flow. It is a well-known fact that bees are apt

to be a little cross at the end of a buckwheat or basswood flow—more so than from the closing of clover which is more gradual.

Some five or six years ago, about the crossest bunch of bees we ever struck, that previously had been as quiet as kittens, and could be bumped around and handled in all kinds of rough ways, were some fine Italians at our Harrington yard. At that time, about ten or eleven o'clock, there would be a heavy roar of bees on honey-dew. In the mean time the sun would dry this honey-dew down to a point where the bees could not get it, and then there was trouble. The dew of the next morning would loosen it up again, when the bees would be working on it as strong as ever; but in about half an hour after the honey-dew had dried up, when there was no more to be had, the little rascals would be, to put it mildly, ugly. We attempted to go through a hive to see how much of the black stuff they were gathering. No, sir, 'e. They let us know we should mind our own business and let *them* severely alone. They would rush out to attack, literally by the hundreds, when we opened the hive. Smoke was worse than useless. Once or twice we beat an inglorious retreat; for a hundred bees sending their stings into the hands and through the trousers was more than we could stand. The minute we came to renew the fray with great clouds of smoke they would rush out as furiously as ever. Nor was this condition confined to any particular hive.

If any one had visited this yard at that time he would have naturally concluded that we had the crossest strain of bees that ever was; but in a few days after the honey-dew flow was over, they were almost back to their normal—as quiet as kittens.

In trips we have made through the State of New York, when buckwheat was at its height, we have noticed time and time again that bees during the middle of the day were awfully cross. We at one time concluded the buckwheat men did not know what gentle bees were. The reason of the crossness was because the buckwheat stopped along about nine or ten o'clock in the morning, and began again in the afternoon. This sudden stoppage leaves the bees in bad humor, as it did in the case of the honey-dew. Again, we have noticed that, when there are comparatively few bees, and large areas of buckwheat, so that they can gather nectar all day, they are comparatively quiet.

Another thing that will make bees cross is the presence of snakes or skunks. The latter will pry around the entrances of the hives at night. Of course the bees rush out

and attack their enemy. The next day, when the owner of the bees comes around he discovers there is "something wrong." If he detects the familiar skunk odor he can readily guess the reason.

Elementary Biology, Animal and Human.*

UNDoubtedly boys and girls should be taught the laws of health and the importance of the conservation of our natural resources. The authors of this book state that its purpose is to discuss the economic relations of animals to the human race, and to teach how to care for that wonderful machine, the human body, and to make it as efficient as possible in the attainment of success and happiness and the upbuilding of character; and they are confident that no biological knowledge is of more worth to high-school students. The book is in line with a growing demand that our secondary schools furnish a practical education which will be useful in the affairs of everyday life, and that less time be given to studies which are chiefly of value for culture and discipline.

"Elementary Biology, Animal and Human," consists of two books, separately paged, but bound in one volume. The first treats of applied zoology, and the second of human physiology and practical hygiene. Great care has been taken to secure accuracy, and a large part of the text has been submitted to well-known authorities and specialists—the chapter on insects to Messrs. Felt, Root, and Herrick; the chapter on birds and fishes to Dr. Hornaday; the chapter on foods to the late Prof. Atwater, etc. Passing over the lower orders of animals the authors take up at once insects which are beneficial and injurious to mankind. A brief account is given of the life histories of butterflies and moths, grasshoppers, mosquitoes, and flies, and of the ways in which they can be controlled or exterminated. The point of view of the authors is well shown by the fact that only two pages and a plate of figures are given to the structure of mosquitoes in their different stages, while the intensely interesting story of the relation of certain species to malaria and yellow fever occupies ten pages. It is a pleasure to record that the treatment of the economy of the honeybee is modern and free from error; for many of the newest scientific works, as Buttel-Reepen has remarked, contain defective assertions. But

the statement on flower pollination, based on the authority of Prof. Hodge, that for all practical purposes the honeybee is sufficient, should be modified. We most heartily commend the vigorous protest against the wicked and reckless destruction of game and song birds and food fishes; it would seem as though this incredible waste and cruelty had only to be generally known to be promptly checked.

One of the most valuable chapters is that on bacteria and the white blood corpuscles, reprinted in substance from the authors' "Plant Biology." Among these minute plant organisms (bacteria) are found the best friends and worse foes of the human race. In the absence of the forms producing decomposition the earth would soon become devoid of life; while other kinds are the dreaded causes of those terrible diseases tuberculosis, diphtheria, and typhoid fever. It would likewise be impossible to give a better illustration of the importance of the investigation of nature for its own sake. Bacteria were at first not only regarded as of no practical importance, but their study was looked upon as reprehensible. There is a story that the Dutch naturalist Leeuwenhoek, who lived in the seventeenth century, and who is said to have been one of the first to figure bacteria, was told that, if the Creator had designed microscopic organisms to be known, he would have made them large enough to be seen.

The effects of stimulants and narcotics are fairly and conservatively discussed, and their use, even in moderation, condemned in no uncertain terms. In our judgment the evils of intemperance can in no way be so effectually combated as through adequate instruction in the public schools. The chapter on foods and their uses is timely, for the numerous books on food and nutrition which have recently appeared show that this topic is attracting much immediate attention. To those of our readers desiring a clear and concise presentation of the practical biological questions mentioned above we confidently recommend this book; but those desiring a broader view of zoology, or of the classification, distribution, and development of the animal kingdom, should, of course, procure some other work.

The volume is entertainingly written, and well printed and illustrated. It is intended to be used in connection with a previous work by the same authors entitled "Plant Biology," the entire course occupying one year. Full directions for numerous laboratory exercises are supplied, and a list of apparatus, chemicals, books, charts, and other accessories suggested.

* Elementary Biology, Animal and Human, by James Edward Peabody, A. M., and Arthur Ellsworth Hunt, Ph.B.; 12mo, pp. xiv.—194—212. New York. The Macmillan Co., 1912.

Dr. C. C. Miller

STRAY STRAWS

Marengo, Ill.

"HONEY-COMB" seems still to be used in England where we use "combhoney," just as it is in the Bible. In *British Bee Journal*, p. 276, it is said, "Italians will not eat honey-comb."

A. I. Root, you think a gasoline motor has the advantage over a horse for cultivating that it needs no feed while not working, p. 831. It also has the important advantage that it doesn't step on plants.

DEE-LIGHTED, Mr. Editor, that you are getting interested in bee-botany, and hope it will develop into a great love for flowers in general. You'll live longer, have more to live for, and be better to live with.

BY WAY of postscript to the word of the editor, p. 793, urging a stout box to send samples of foul brood, I may add that if you write to Dr. Phillips he will send a tin box in which you may send the sample, and also a frank to pay postage.

SPEAKING of European foul brood, p. 662, J. L. Byer says: "Universal requeening with good Italian stock seems to be about the only remedy for it." Many will understand that to mean that such requeening is all that is needed to get rid of the disease. I don't believe that friend Byer really means that. But in most cases it will be a very important help.

OTTO DENGG, *Deutsche Imker*, 165, commends the plan of raising the brood to the second story and filling the lower story with frames of foundation, and credits the plan to Preuss, of Potsdam, who was then followed by Stachelhausen and Alexander in America. But was not the plan given by G. W. Demaree, Christiansburg, Ky., before Stachelhausen and Alexander appeared on the stage?

LOUIS SCHOLL figures \$5.00 rent for locating an apiary of 50 colonies, p. 795, and twice as much for an apiary of 100. That would be fair if the rent of the land were the only thing considered. But generally the actual land rent is a minor consideration, and the farmer would about as soon have 100 colonies on his place as 50. It is, however, getting more and more that the farmer considers it a favor, and wants no rent.

FEEDING when robbing is bad," p. 745, recalls a safe and easy way in which I've fed tons. Put Miller feeders on the hives. Leave them open all over the apiary if you like. Bees don't rob dry feeders. Pour dry sugar into them, still leaving them open.

Bees don't rob dry sugar. Go around and pour water, cold or hot, into each feeder. You'll have plenty of time to cover up before the sugar and water becomes robable syrup.

"I HAVE never believed a farm complete without a few colonies of bees carefully kept in modern hives," says Louis H. Scholl, p. 707. I sympathize with that view, and yet it's more poetical than practical. That would mean each farmer a *thorough bee-keeper*, with no specialists, for there would be no room for specialists. Wouldn't it cost less to have enough specialists to gather all the honey than to have every farmer trained to keep bees "carefully"?

TO GET bees out of supers of sections, the easy way is to smoke down most of the bees before taking off, then pile up the supers 10 to 15 high and put a Miller escape on top. But sometimes they are stubborn about coming out, and then the surer way is to replace the escape with a hive-body containing a frame of brood, or even honey, covering over. Then empty out the bees two or three times; or if you have a colony that needs strengthening there's nothing nicer than to give it these bees.

WE ARE TOLD that you can spot laying workers by eggs laid irregularly and more than one egg in a cell. You can't—always. I've known laying workers, when they had plenty of good worker-cells, *and no others*, to do work that you couldn't tell from that of any good queen. But if they have drone-cells they'll double up in them, and they like queen-cells still better. [There are exceptions to all rules in beedom. In addition to what you describe, a good laying queen will sometimes lay two or three eggs in a cell in baby nuclei. The reason is apparent—she does not have room.—ED.]

J. E. CRANE says, p. 622, that with him superseding takes place at all seasons, and quotes me as saying "superseding practically always takes place after swarming is all over." That sounds rather wide apart, but I suspect we're not so very far apart. Superseding also takes place with me at all seasons, but so little at other times that it's *practically* all after-swarming. Note, too, that I don't say "after all swarming is over," but it's after swarming is all over with each colony. Swarming may be all over with one colony in June, and with another in August or September. Then there are colonies that will supersede their queen with no thought of swarming, and

some whose superseding is delayed because queen-cells have been killed, so that superseding may be from June till September.

ARTHUR C. MILLER, p. 718, quotes me as saying bees don't mix pollen or honey in the same cell. Please play fair, Arthur, and read the whole Straw through. I quoted what I think is the general belief, and then said it was *not* always true. But it's the rule with rare exceptions—here. I suspect it may be different with you, and you have incidentally given the reason. You say honeys are perhaps always mixed "when the bees of a colony are working on more than one source." That's just it. Here, some one source of nectar has the preference, and that source is nearly always plentiful enough so that bees rarely work "on more than one source." Your bees may be obliged to work on different plants at the same time, in which case it should be the rule, and not the exception, that cells contain mixtures.

THERE has been some tendency to say "extract" instead of "extracted." Now it seems to have the sanction of the U. S. Government and GLEANINGS, p. 748. It is incorrect; yet it has the advantage of being shorter, and use may make it correct. But I'm afraid of the effect on the popular mind. Will not the public think of "extract of honey," and class it with "extract of coffee" and other things that are not genuine? [The word "extract" must have been a misprint in the government bulletin. Our printers followed this spelling with singular fidelity—that is to say, we printed it just as it was in the bulletin. In going over the bulletin elsewhere we find the word "extracted" in full. The abbreviated form would be objectionable, as you say, on account of the general public who would naturally construe it as being an extract of honey and not the real article.—ED.]

FOR HIVE-COVERS "good roofing-papers, if carefully used, will do good service for ten or twelve years," p. 606. I have testimony on that point. Years ago I had two hive-covers from Medina covered with a heavy paper, but not roofing-paper. I think it was Neponset. I was to keep them painted, but never put on a drop of paint. One of them lasted till this year; the other is still good. If you can recall, Mr. Editor, when you began experimenting in that direction, you can tell how old those covers are. I wonder if repapering would not be cheaper than painting. [We have tested out the Neponset paper at our yard, and had practically the same experience that you had. The only objection to it is that it will cut or tear away when metal would not. When hives

are piled one on top of the other, these Neponset roofs are likely to suffer damage, especially if the hives contain heavy combs.
—ED.]

IN every case where I have tried it, no matter what the condition of the colony, a virgin less than a day old has always been accepted, even with laying workers or a laying queen, although in the latter case she would be killed when a day or two older. But what J. E. Hand says, p. 722, makes me suspicious that there are exceptions, and I'd be glad to know if he or others have had virgins killed when less than a day old. [Yes, we have had virgins killed when less than a day old, although the rule is that up to 24 hours they will be accepted by a queenless colony without any smoking or introducing, providing they do not carry the odors of the fingers of the apiarist, and even then they will generally be accepted. We have made it a rule, when introducing to day-old virgins, to keep the fingers off from them and allow them to run quietly out of the cage down between the combs or into the entrance without opening the hive.
—ED.]

MR. EDITOR, I've troubles of my own with two Scotchwomen under the same roof without your letting that Macdonald Scotchman get after me, p. 728. He quotes me as saying, "I don't believe I ever gained by stimulative feeding," and says I'm wrong. Then he comes at me like any other Scotch preacher with his "firstly," "secondly," and "thirdly." Firstly, the immense gain by feeding small lots having a queen, virgin, or cell. Well, I never stimulatively fed such lots, so I couldn't gain in that way, could I, Mac? Secondly—well, there's some chance for a healthy fight on some points in your secondly; but as I never practiced stimulative feeding on a weakling in early summer I don't believe I ever gained by that way. Thirdly, autumn stimulation. I've fed quite a lot in autumn, first and last, but always as nearly in a lump as I could, which can hardly be called stimulative feeding. The only stimulative feeding I ever tried was on full colonies in spring, and I don't believe I ever gained any thing by that; and if I understand you correctly you don't believe I did either, friend Macdonald. And since that is the only stimulative feeding I've done, do you blame me for thinking I never gained by stimulative feeding? But don't for a minute think I don't believe that others have gained, and gained big, by stimulative feeding. But it was in cases where a lack of a natural flow was of such long duration that, without stimulative feeding, breeding would have ceased.

BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado.

CLOSING UP THE HONEY SEASON.

It has been noticed that, every fall, the bee-men are prone to leave the packing of their comb honey until an order is received, and then there is such a rush to fill it that less than satisfactory grading of the honey is done. I have seen comb-honey packing given up at the close of one shipment of honey, and then the rush comes on again when the next sale of honey is made. This is all wrong. The honey suffers in preparation; the beekeeper goes to needless expense in getting the honey out quickly, and the buyer has to wait from one to three or four days longer than desired. If a crew of packers can be trained before the rush is on, the honey may all be ready for shipment when the buyers want it, or soon after it is off the hives. The plan of cleaning and packing comb honey at the outyards has its advantages in that the honey generally gets into the shipping-cases sooner than if it is all hauled home and then cleaned and cased.

* * *

EUROPEAN FOUL BROOD IN COLORADO.

European foul brood has been found in Delta Co., Col.; but, so far as known, it is still confined to a small area southwest of Paonia. The district affected is not over three or four miles in diameter, and contains probably 300 colonies, a good proportion of which show the disease. The bees are all a fairly well-marked strain of Italians, but this does not seem to bring about any evidences of immunity.

Queening with young vigorous Italian queens, and the shaking treatment, is recommended. In the purchase of queens it cannot be too strongly emphasized to buy queens only of breeders who are located in districts known to be free of European foul-brood infection. Destroy the cages and candy with all attendant bees, and more safety will be assured. It cannot be too strongly emphasized that European foul brood is serious, and that its destructive abilities should not be discounted. Every beekeeper who has any diseased brood should send a sample to the Bureau of Entomology, Department of Agriculture, Washington, D. C., for examination.

* * *

NATIONAL CONVENTION IN DENVER.

The West is to have the National convention this coming February, and we hope to welcome the convention in royal western fashion. Colorado has a fine class of honey-producers, and a large delegation will be

in Denver for the National. This convention, it is hoped, will draw attendance from the whole Inter-mountain region as well as the rest of the country.

We can promise a large crew of hosts for the visitors; and if the weather and the roads are favorable we will see that the visitors see some of our western apiaries in automobiles. There are many large apiaries within twenty miles of Denver.

I would suggest that all beekeepers who can and will help in the entertainment of this convention write an offer of their assistance to Pres. N. L. Henthorne, of the Colorado State Beekeepers' Association, Platteville, Colo., or write me. Suggestions as to the way in which we can best entertain and care for the convention will be welcome, and are solicited.

The West can promise all visitors the presence of a score and more of specialists who count their apiaries instead of colonies. Every one of them has valuable money-making ideas; and the beekeeper who comes to this convention and goes away not doubly repaid will be at fault in his capacity for absorption of valuable ideas.

* * *

THE HONEY MARKET.

Comb-honey shipments have been going out very promptly, few producers having to wait for satisfactory offers after the honey is packed. By Nov. 1 there will be little comb honey left for the outside market in this State. Western-slope producers are getting \$2.75 for No. 1 comb, net weight not less than 12½ oz.; \$2.50 for choice, net weight not less than 11 oz.; \$2.25 for No. 2, net weight not less than 10 oz. On the eastern slope in Colorado, where carload shipments take the Colorado common points rate, the prices secured range around \$3.00 for No. 1; \$2.85 for choice, and \$2.70 for No. 2.

Extracted honey has sold on the western slope at 6 to 6½ cts. a pound, although the amount produced of extracted honey is small compared with the comb-honey production. Extracted honey sells locally in eastern Colorado at 7 to 10 cents a pound. Carload lots would not bring above 7 cents.

Sugar has been selling for more than extracted honey in many parts of Colorado. One beekeeper is selling extracted honey at 7 cts. a pound in small lots, and sugar is selling in his town at 9 pounds for a dollar. The demand for honey has markedly increased; and if sugar remains high in price, honey will surely reach sugar prices at least.

J. L. Byer,

NOTES FROM CANADA

Mt. Joy, Ont.

On page 745, Oct. 1, it is said that, with the exception of clover, the honey was about the same as other years. This may be right for Ontario; but please bear in mind that, one year with another, clover is 90 per cent at least of the total white-honey crop of Ontario. This year the clover crop is a total failure in most parts, so that places our yield away down, taking GLEANINGS figures for granted.

This year we have the unusual experience of a September flow of honey here in Ontario, our north yard having stored considerable from Sept. 11 till Sept. 23, when the weather was so unusually warm for the time of year. Brood-nests had been heavy previous to this flow, and at present the 250 colonies there are literally jammed to the bottom-boards. Much of this late honey came from a variety of asters growing on high lands—having a purple-colored flower. Aster honey has a bad reputation for wintering in northern latitudes, so we naturally shall be a bit uneasy as to the results this coming winter. The honey is light in color and nice in flavor, but is usually a bit light in body as well. What is in the hives seems to be pretty well sealed over, so after all it may do all right. At this late date it would be a big undertaking to extract this honey from the brood-nests and feed sugar, so we are taking chances. As a result, some hundreds of pounds of sugar that we had shipped us was left on our hands; but needless to say it will be easily disposed of.

As to robbing during feeding I have read with some astonishment the item on p. 745, Oct. 1, the experience of our friend in Michigan. Candidly it is a mystery to me why there should be any trouble when feeding sugar syrup. This fall the bulk of our feeding had to be done at the home yard, so I arranged to feed at home in the forenoon and to go to an outyard in the afternoon, alternating the different outyards each afternoon. As already mentioned we have had unusually warm bright weather for the time of year, and bees were just as active as in summer time. But for all this I fed some hundreds of pounds of warm syrup during the forenoons; and, barring one rather amusing incident, I had not the slightest bit of robbing; and although corn-cutting and apple-picking were going on all the time right near the apiary, not a single person or horse was stung. Miller feeders and pails were used, and the only precaution taken was to see that no syrup was spilled over the hives, and that all

covers were secure so that no bees could get at feeders from above. The bees in this yard are about 75 per cent Italians, the rest Carniolans and hybrids. Entrances were as they had been all summer; no weak colonies were fed, as it does not pay to winter weak colonies outdoors here, now and then a few nuclei excepted. I have for years fed the bees in just this way, and have yet to have a genuine case of robbing by so doing.

Let me tell of the "amusing incident" referred to a moment ago. No. 8 is a strong Italian colony at the east of the yard, while No. 12 is a similar colony at the west end of the apiary. No. 8 was fed heavily, and a few days later No. 12 was given a large Miller feeder with about 25 pounds of syrup. The colony, while very strong in bees, was one of the lightest in the yard, as about all their honey was in the super. Coming home the evening of the same day this colony had been fed in the forenoon, I noticed that the bees had got under the telescoping gable roof at one corner and were flying in and out freely. As it was quite late in the day, and few bees were flying, I soon found that the bees from No. 8 at the far side of the yard were the thieves. By next morning the feeder on No. 12 was about empty, so I removed it, thinking the bees of No. 8 would get a hot reception if they tried to get in at the entrance. Both colonies were bright Italians. Imagine my surprise when, going into the yard a few hours later, I found that the bees from No. 8 were going in and out of the entrance of No. 12, and no fighting whatever. No other bees were in evidence at all, and there were no cross bees—a case of *peaceable* robbing, if you please. I promptly placed a large feeder on No. 8, giving them more feed than they could possibly store, and awaited results. Next day, imagine my surprise once more to find the bees from No. 12 now working just as hard at No. 8 as No. 8 had been at their hive the day before. More feed was given to No. 12, and for the last week every thing has been quiet. Did the bees from No. 8, when they gained an entrance to the feeder on top of No. 12 acquire the same "colony odor," or what is the explanation? A good friend was present, and can vouch for the truth of this story; but for an explanation we shall have to get some one else to furnish it. During the few days of this mutual robbing, not a cross bee was in evidence; and while I watched carefully, not a single bee seemed to gain entrance to either hive except the ones directly interested in the matter.

BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

The first rain of the season fell on the night of Oct. 2, and was welcomed by Californians. The amount was not heavy, only half an inch; but the way it freshened up green foliage was pleasing indeed.

During July and August I had the great pleasure of visiting the old homestead where I spent my boyhood days and acquired my first knowledge of the bee business. Things have changed greatly, and conditions were much different than when I left, nearly twelve years ago. My father and mother, both in their eightieth year, have retired from the farm, being too old to have the cares connected with it. The old woods were still there, and I had the pleasure of finding two bee-trees, thus renewing an old-time sport. The vast acreage of potatoes that was being grown in the Kansas River bottoms in my time has given way largely to alfalfa, the flood in 1903 having almost ruined the land for potato culture. There were few bees in the surrounding country—only a few colonies here and there.

My sister has taken up the bee business in a small way, and I was surprised to find her 25 colonies had nearly 1000 pounds of nice white section honey, for which they had a ready local market at 15 cts. per section. One of the oddest things to me was to find the brood-combs full of very dark inferior honey-dew, yet the section honey which had been gathered later from sweet clover and alfalfa was very pretty and white. In my time, these two sources were not considered, there being so little of either. Considering the very dry season in those parts I feel that she is to be congratulated on her success.

It is wonderful how the production of alfalfa has increased all over the eastern portion of Kansas, and also in the west, where irrigation is being taken up. In many sections of the State there are large quantities of seed raised, which is said to be as desirable as that produced in any part of the world. In Douglas County, adjoining the farm on which I lived from 1876 to 1883, there was in 1911 a very large crop of seed produced, which was sold for \$1700; yet, so far as I could learn, there were few bees to gather the nectar from the bloom.

J. E. Crane, page 709, Sept. 15, takes issue with Wesley Foster and myself over

our contention that bees when clustered outside of the hive are wasting time. In my comment I had taken Mr. Foster's view of the matter. Now friend Crane says, "Because we see a woman sitting under the shade of a tree by her kitchen door when the mercury is 90 degrees in the shade, it is no sign that she is loafing or wasting time." Not in the least; she is simply adjusting herself to more comfortable conditions—exactly what the bees do when they leave the hive to cluster. If conditions were right in the kitchen the woman would no doubt have remained within to complete her kitchen work; and even if she had to return to the kitchen every time she had shelled a pod of peas, for another, she would, in all probability, have concluded that the additional exercise she was getting would not be conducive to keeping down the heat to a point enjoyed by quietly remaining by the kitchen sink. Langstroth, edition of 1870, page 90, says: "Bees in such weather often leave, almost in a body, the interior of the hive, and cluster on the outside, not merely to escape the close heat within, but to guard their combs against the danger of being dissolved." This is very much in accord with my ideas. The clustering-out of bees is due to a condition not normal, and must disorganize the forces of the hive to an extent that causes a wasting of time. In 1889 I had a colony in a ten-frame single-story Langstroth hive that became crowded, and naturally the bees began to make preparations to relieve the situation by swarming. Quite a large cluster had left the hive and were hanging under the hive-stand, which was about eight inches in height. They had been in this position for a number of days when a swarm issued; but the cluster under the hive-stand was so ignorant of conditions in the hive that they did not get excited at the emerging of the swarm, but quietly held to their cluster, not only until the swarm issued, but for more than 48 hours after, before they returned to the hive. This gave me the impression that they were not in communication with the interior of the hive to an extent that apprised them of the fact that swarming preparations had been completed. They had left the hive as a matter of self-protection, and were only fulfilling that one object, with no other work to perform. I cannot agree that every bee in the cluster outside of the hive is full of nectar, even if nectar is coming in freely, as Mr. Crane says.

CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.

QUEEN INCUBATION.

"Did you notice Dr. Miller's statement, Sept. 15, regarding the incubation of queens in six hours and ten minutes less than fifteen days? How are we to reconcile such with Quinby's sixteen days?"

I must say that Dr. Miller's figures give a shorter time of incubation than I have ever noticed, and, so far as I am conversant, the shortest ever noted by any one when calculating from the laying of the egg to the fully developed queen. That bees perfect queens where brood of all ages is given them, so that some will emerge in as little time as nine days from the time such eggs and larvae are given to a "broody" colony is a thing that many close observers have proven; but with Dr. Miller's experiment it will be noted that his is from the time the egg was laid, or very nearly so. It used to be calculated that where bees had brood in all stages, they would select such as would give the best of queens, if such selection were left to them entirely. It looked quite reasonable that they should; but experiments have proved the contrary. Perhaps I should modify that a little. Bees raising queens under the swarming influence, or where a supersEDURE of queen is planned, do this while the old queen is present with them; consequently begin with the egg as Dr. Miller's bees did; but where the queen is taken from a colony, or queenless bees are made to start queen-cells from brood given, the case is altogether different. The trouble is that, through their eagerness to get a queen, they generally err by selecting one or more larvae for the purpose that are too old to produce the best queens; while, later, after this eagerness subsides a little they will take larvae young enough to give good queens. But through older larvae being taken first, the queens from such emerge first, so that the later and better ones are destroyed. The remedy is to destroy all queen-cells sealed over, which are found four or five days after the brood was given. Such will give queens that are much more satisfactory than those raised by the usual mode of procedure—enough more than to pay for the extra time used in this work.

But this is not to the "reconciling" of Dr. Miller's time with that given by Quinby and others. I think that Editor Root's footnote on page 705, Sept. 15, goes a long way toward reconciling matters. It will be noticed that Mr. Miller began his experiment on July 6, 11:10 A.M., probably when the weather was very warm, as Editor Root

infers. But this is not all. It was also at a time of the greatest activity of the bees, and this activity had more to do with the shortening of the usual time than did the hot weather. Whether Editor Root included the activity of the colony in his "particular environment" or not I cannot say; but right here is a point not generally taken into consideration by the most of us when rearing queens. In central New York the best of queens cannot be reared without great vigilance on the part of the apiarist, except from May 20 to August 25 in the ordinary season. Especially does this apply for the six weeks following the latter date. As the harvest from buckwheat begins to wane, a natural "drowsiness" seems to come over the bees preparatory to the winter "nap," and queens reared under ordinary circumstances by queenless colonies consume 16, 17, 18, and sometimes as many as 21 to 22 days for their period of incubation; and I have known 20 days to be used in April and the first half of May. However, bees are much more active inside the cluster during spring than they are during the fall months. And the size of the colony does not play so important a part as many suppose during the time between June 15 and August 1. A two-frame nucleus will raise far better queens at that time than will a full colony in September where such colony is not looked after by the apiarist further than taking away the queen. I have had queens incubated in full colonies during the last half of September, where, through sickness or some oversight, said colonies were not "spurred on" by proper stimulating, that were very little larger than an ordinary worker's, though perfect in shape and form, and that did not emerge earlier than the 21st day after the eggs were laid from which they were produced.

To raise good queens in September, shake queenless bees into a box in the morning and feed them in confinement till four P.M.; then run them into a hive on their old stand, prepared as follows: A feeder next the side of the hive, then a frame of nearly empty comb, then a frame of comb partly filled with honey, and a hundred or so cells of sealed brood (preferably part drone); then the frame of prepared cell-cups; another frame of honey, and another nearly empty comb, with a dummy drawn up beside the latter. In such colonies, with a good feed given near sunset each night for the next ten days, as good queens can be reared as at any time of the year.

GENERAL CORRESPONDENCE

TREASURY NOTES—ALL LEGAL TENDER

BY ARTHUR C. MILLER

Much poor beekeeping is due to fear of stings. Many stings come from poor bee-keeping.

* * *

Swamp beekeeping is very alluring, may be very profitable, and is sometimes quite disastrous. There are swamps and swamps. Investigate carefully before you locate. Better winter your bees on the high lands, any way.

* * *

Did the bees persist in robbing out the nucleus despite your putting the combs at one side of the hive and the entrance at the other, "so as to bother the robbers"? It was the best sort of *help* to them. Put the combs and bees close to the entrance and then they will fight to protect it.

* * *

I wish the supply houses would never again put out a hive-floor with less than an inch space on it. Why? Try inspecting for a time, and you will cease to ask foolish questions. Personally I like to get frames out with the bottom-bars on them. They are not a beneficial addition to the floor.

* * *

How very few beekeepers ever study bee behavior experimentally! Most of them are too busy with something or other, or are too much absorbed with planning manipulations. But such study will pay. It will give you more time for something or other, and will do away with many manipulations.

* * *

Did you ever notice how many of your combs have a patch of drone-cells in one lower corner? Have you also noticed that it is the corner nearest the entrance? I am talking of combs built on full sheets of foundation. How does it happen, do you ask? When the bees are more or less idle at the end of the season they often cut away comb near the entrance, using the wax elsewhere in the hive. The next year drone comb is filled in those spaces.

* * *

Do you want a nice weedless, mudless, dustless strip before, behind, beside, and beneath your hives? Smooth the ground and lay down a strip of one of the better grades of asphalt roofing paper, using the heavy weight, and put your hive stands on

it. A good paper will wear for a long time. The cheaper sorts are made with tar and oil, and soon crumble. A fine asphalt walk about your hives sounds expensive, but it isn't—and the luxury of it!

* * *

I am glad to see that the tide is turning, and that others are advocating doing the "stimulative feeding" in the fall. A full larder and a young queen in the fall, spells good wintering, good springing, and good cropping. Incidentally it is a good lazy man's way—lots less work than spring fussing.

* * *

Won't the new system work as stated? How many of your own notions did you put in when trying it? Probably several. And then you blame the originator. Try it again and follow his directions exactly, and be sure you understand them. There is a bare possibility he knows more about it than you do.

* * *

Mr. Crane objects to the advice to have foundation drawn during a flow of honey-dew because he does not have enough dew more than once in twenty-five years. Lucky dog! Well, a brood-comb should last twenty-five years, so my advice will still hold good—if he doesn't want new ones before his next dew flow.

* * *

Allen Latham says, "Good clean spit is the best thing out for diluting royal jelly. I find cells better accepted, and queens larger, where I thus dilute the food than otherwise. I am careful that my mouth is clean before I use saliva." If memory serves me rightly, some one else has written to the same effect. Now that A. L. has confirmed it we may all safely follow the practice.

* * *

If you do not want the bees to stick it fast, rub mutton tallow on it. That is what James Heddon said years ago, and it is as true to-day as then. But there are some parts of a hive that are better stuck. You will discover them after you have tried the tallow awhile. But be sure to try it, for it facilitates a lot of work. Rub it on cold or put it on hot with a brush, as suits the time, the place, and the man,

Did you ever notice the nice things suggested for "floats" when feeding from pans, etc.? Cork chips when you cannot find enough cork on the place to stopper the molasses-jug; planer-chips when there isn't a planing-mill within ten miles of you; excelsior when you haven't seen any in years; grass where there is no grass, and all the time the beeyard is cluttered up with the best sort of non-soakable float material, to wit, bits of comb and pieces of foundation. Why didn't you think of it?

Will some inspector devise a way to get "the average beekeeper" to do better bee-keeping? It does not seem as if human ingenuity could devise more wrong ways of doing things than the inspector finds. But the things left undone are legion also; and the way nicely made factory goods are misused is astounding. First they are improperly made up and then they are wrongly used. A "bee-space" is an unknown factor to the "averager." There may be an exception, but I have not found him.

Dr. Miller and Mr. Dadant agree that some queens prove good the third year, so they prefer to give all good two-year-olds a chance for another year. But did they ever consider that such practice is at the bottom of the irregularity of colonies the following spring? By putting in each fall young queens carefully raised from good stock we

are reasonably sure of having very nearly all of the colonies of the same strength the next spring. The value of such conditions they will acknowledge. The use of thoroughbred stock is implied in this practice. It will not do to use queens of various strains and matings if you expect uniformity. Selecting breeding queens is almost as difficult as picking one's ancestors. You must begin several generations back. Incidentally there are several factors involved besides color.

I wonder if it would not be a great blessing if every sheet-zinc honey-board, bound or unbound, should vanish from the face of the earth, leaving only the slatted kind to be used. When inspecting recently I removed two supers solid with honey, and then found a sheet of zinc glued solidly to the brood-frames. There were just five holes open for the bees to pass through. Methinks I recall a lot of talk on giving bees *easy* access to the supers. Just what constitutes "easy access" from the bees' view-point? However, the bees glue up the slatted kind in a similar way when left on year in and year out, as so many are. But it is possible to get off the slatted one and still have it usable. Not so with the sheet zinc. Well, the less said the better. Memories of attempts to return it to the hive at the owner's request are still too painful.

Providence, R. I.

A BEE-INSPECTOR'S OPPORTUNITY

BY A. E. CRANDALL

A short time ago I took a trip through a part of our county with our State bee-inspector, and it certainly was a trip I enjoyed. It was a warm sunshiny afternoon, and apple-blossoms were opening up in good shape; so you can imagine the bees were quite busy, and it seemed good to hear that contented hum as they got their fill from those blossoms. There are thousands of fruit-trees being planted in this locality, and there are plenty of good-sized orchards already in bearing.

We came across one beekeeper who had just set 1000 fruit-trees; and while the general appearance of his place was good, most of his bees were in a variety of hives and in bad condition, and still he told us he had made money with them.

I have about made up my mind that bee-inspectors must find as good a variety of people as hives. To me it was amusing to

see the looks they would give the inspector when he introduced himself; and, no wonder. What would you think if a man clad in overalls, and with sleeves rolled up, appeared at your door with a hive-tool in one hand and a smoker (a thing which you never saw before) in the other. One woman who was out in the yard when we arrived "beat it" (as the boys say); and when friend Yates went to get her name she had disappeared; but the dog was inside of the screen-door, begging to be let out; and as we had other places to go to we did not stop to minee matters.

Another place we went to had "some bee-house" on it, and the inside was as dark as a pocket, and even on that spring day was as hot as a fireless cooker. The two ladies who were at home came down to see the "fun," as they expressed it—of course meaning to see some one get stung, and



A crowd of new enthusiasts.

wanted to know what "that thing" (the smoker) was. When they saw it in working order, and realized how easy it was to handle bees by using one, they saw the fun was not all on one side. Mr. Yates left bulletins on foul brood with a good many people. I think the inspectors have the opportunity of doing a lot of good for those who appreciate their work. Their work is not all "honey" by any means.

There is a need of education along bee-keeping lines; and to those who fear over-production of honey from this cause I would say, look at the work of our fruit-growers' associations scattered all over our country. They are creating a demand for their product. They show fruit, talk fruit, and even give it away at our conventions in winter; and by giving people an apple they are creating the demand. I don't mean by this that beekeepers should give away a whole crop of honey, but a sample now and then, put in the right place. I think it would work wonders.

Another thing, we hear of over-production of apples in some localities, when only a few miles away the demand is keen; but

the means of transportation are the stumblingblock. The question of distribution is what is bothering some of our beekeepers, and I think some fruit-growers also. Any way, let us all push a little.

I am sending a picture of some of my friends who came to see us from a near-by city. It was with some misgivings that they consented to handle a frame of bees; but I assured them that the bees would behave, so you see the result. The hive in the picture is one similar to Mr. Fuller's, of Blackstone, Mass., but this one holds 14 frames. A gentleman 73 years old came to see the bees one day last week, and I guess he was pretty well pleased with what he saw, judging from his expressions. When I showed him the queen-cells the bees were building he said he never before saw any thing in all his life to equal it. Well, who did? The work bees will do is wonderful; and when spring opens up with all the beauties of nature, and the bees start to work, one can't help feeling that it is good to be alive on this old earth, and be a beekeeper.

Berlin, Ct.

SMOKING IN QUEENS AND BEES

BY W. B. COZINS

Concerning the smoke plan of introducing, I wish to say that I have introduced queens into full hives, half-hives, and two and three frame nuclei, with perfect success except once, and I don't consider that the fault of the plan.

I seldom stop the entrance, and never unless there are signs of robbing or something else that is unusual, and I introduce at any time of the day that suits my convenience, although I believe toward evening is best.

The instance I wish to speak of happened rather late, after the swarming season was over. I had gone fishing; and when I came home about dusk my wife told me that there was a little swarm hanging in an apple-tree. The next morning I shook them into a basket and found them to be beautiful yellow Italians. I had a hive of dark hybrids that had no queen, but plenty of honey; so I thought I would unite them. I picked up the queen and smoked her in, and dumped the bees on the alighting-board and smoked them in. They began fighting immediately, so I smoked them as much as I dared to, and closed the entrance nearly tight, and left them, thinking it a failure. They fought all day, and were still at it the

next morning; but by that time there were only about a dozen yellow bees left. I felt pretty blue over it, for I hated to lose that beautiful queen. Two or three days later I opened the hive to find out what was best to do with them, and there was that yellow queen with a nice patch of brood, but not one yellow worker could I find!

In smoking in queens I watch a few minutes until the guards begin to come out; then I consider the job finished unless there is danger from robbers, in which case it is necessary to watch until every thing is all right or else stop the entrance with green grass.

Hadley, Pa.

CONCRETE HIVE-STANDS

BY C. V. RICE

I am so much pleased with my cement hive-stands that I want to tell the readers of *GLEANINGS* about them. These cement stands are of just the right shape, size, and weight to be most convenient to adjust, wherever the hive is placed. They are especially handy when it comes to lifting a heavy super, as they take up so little room, and allow standing close to the hive.

I make my stands $15\frac{3}{4}$ inches long (for ten-frame hives), with a six-inch base, two-inch crown, with concave sides, and in two sizes, 5 and 6 inches high. By making the

sides concave I save cement. They are neater in appearance, are easier to handle, and will keep a drier resting-place for the hive. The cement has a tendency to draw moisture from the ground; but the shape of these stands gives them such a drying surface in proportion to their volume that practically all moisture is dispersed before reaching the crown.

When placed on level ground a six-inch stand at the back and a five-inch one to the front will insure the hive of proper drainage in wet weather.



FIG. 1.—C. V. Rice's concrete hive-stands, and form for making them.

One barrel of cement mixed in proportion of 1 part of cement to 8 of coarse sharp plastering sand will make from 175 to 200 stands. They are easily made, but should be kept well wet down for two or three days while setting, as it will make them much firmer.

I was much troubled with ants working into my hives, as they infested the old decaying wood stands which have to be replaced every few years any way. This led me to experiment with cement.

Lawrence, Mich.

[Mr. D. Abbott, of Bradenton, Florida, has been using a similar hive-stand for some time, with this difference. He places a block in the form that makes a notch in the stand, thus saving material and making a much lighter block, and one more easily handled. Fig. 2 makes the idea plain. He places two wires in the concrete as he tamps it into the form, thus making the block almost unbreakable. The mixture is just dry enough so that the block can be removed from the form immediately.

Mr. Abbott has also a ventilated cover, shown in Fig. 3, made of a framework roofed with corrugated iron. A separate super



FIG. 2.—D. Abbott's hive-stand which requires rather less material than the one shown in Fig. 1.

cover is not needed, for the cover boards lie flat on the hive, and are cleated above and below, the under cleats telescoping down on the side of the hive to keep the cover from blowing off. According to Mr. Abbott this cover is light, cool, water-tight, and everlasting.—ED.]

BEE AND HONEY EXHIBIT AT HARTFORD, CONNECTICUT, FAIR

BY E. G. CARR

The 1914 announcement of the Hartford, Ct., fair states that the management is determined to make this the best fair yet held; and the exhibit of apiarian products and supplies plainly showed that the Connecticut beekeepers had caught the same spirit and carried the idea to a successful finish.

While the poor crop, both in quality and quantity, had a depressing effect on the exhibit as a whole, the "Nutmeg" bee-

keepers were undaunted, and the 20 x 30 ft. building set apart for bees and honey by the Fair Association was well filled with exhibits, as, indeed, it should be, as \$500 in premiums was offered.

The competition in light extracted and chunk honey classes was so close that it was with the utmost difficulty that the judge was able to name the winners.

Thirty-six one-frame nuclei were shown.

In this exhibit were different races of queens with their own progeny, and also a class for best display of different races. In this latter class were blacks, Caucasians, Carniolans, Banats, Italians, Goldens, Cyprians, and Holy Lands. This exhibit showed the need of a standard of perfection in judging queens and bees of the different races. To illustrate: What are the prominent differences between the Banats, Carniolans, and Caucasians?

In the exhibit of blacks the judge ruled out one nucleus, the bees of which showed distinct gray bands of hairs on the abdominal segments instead of yellow or light brown. In discussing this later with the exhibitor he said the history of those bees, so far as known, precluded the possibility of any admixture of far-eastern blood, but acknowledged that the color was distinctly gray.

The catalog ruled that the first consideration in judging extracted honey is body and color. This brings up the question whether, other points being equal, the lightest-colored honey shall be given first in the light class, and the darkest in the dark class.

When the judge came to the canned fruit, pickles, and cake in which honey instead of sugar was used wholly or in part, he soon found that it was an almost impossible task for a "mere man" to decide which was

better; and to show that Supt. Yates realized what the result might be otherwise, he saw that the judge had luncheon before judging the culinary department.

The array of good things to eat in this department gave one the impression that it is a good thing to be the husband of a bee-keeper's wife in Connecticut.

To be sure, one can get booklets of recipes for honey cookery; but the long list is somewhat confusing, and it is suggested that the recipes for the prize-winning cakes be printed on slips of paper and placed near the cakes so those interested might be induced to try the honey cookery and thus increase the use of honey.

Allen Latham, the original honey-sandwich man, was again doing a good business, as was also W. K. Rockwell.

A NEW HONEY DRINK.

A new honey concoction was tried out, and proved a great success. This is honey soda or "honey fizz," as the "barkers" called it, and is soda sweetened with about two tablespoonfuls of honey and a little less of evaporated cream.

On Monday (Labor Day) Mr. Yates, who had the honey-fizz concession, ran off 2800 glasses of this drink, using eleven ten-gallon tanks of soda, seven gallons of honey, and four gallons of cream. Besides being of pecuniary profit to the concessioner, such departures are of value to the whole bee-keeping fraternity in advertising honey, and it is not unlikely that in time every soda-bar in the land will serve honey-fizz and thus increase the consumption of our product.

A. W. Yates, Hartford, and Allen Latham, Norwich, tied for sweepstakes on first prizes, each having five, Mr. Yates winning on second with three—amount \$25.

THE Winnings.

A. W. Yates, Hartford, 1st on Carniolans; 1st on display of races; 1st on display of queens; 1st on queen-rearing outfit; 3d on Italians; 2d on Goldens; 3d on chunk honey; 2d on light extracted; 3d on dark extracted; 1st on display of honey; 2d on display of bee-fixtures, and sweepstakes. Total winnings, \$150.

W. K. Rockwell, Bloomfield, 1st on Goldens; 3d on Carniolans; 3d on blacks; 2d on display of races; 2d on display of queens; 3d on queen-rearing outfit; 1st on chunk honey; 1st on light extracted; 3d on granulated; 2d on display honey; 2d on wax. Total amount, \$96.

J. G. Griswold, Hartford, 2d on Carniolans; 2d on blacks; 2d on chunk honey; 2d on Goldens; 3d on display of races; 3d on



Fig. 3.—The hive-stand in use, also showing the corrugated iron cover.

display of queens; 3d on display of bee-fixtures.

Allen Latham, Norwich, 1st on blacks; best 10 sections; best case sections; dark extracted and wax. Amount, \$46.

H. W. Coley, Westport, 2d on cs. sections; 2d on 10 sections; 1st on granulated; 2d on dark extracted; 3d on light extracted; 3d on display of honey. Total, \$39.

W. G. Ehouse, Bridgeport, 2d on granulated; 3d on 10 sections; 3d on cs. sections.

A. E. Crandol, Berlin, 2d on Italians; 2d on queen-rearing outfit.

L. W. Adams, Hartford, 1st on Italians.

C. H. Clark, Cobalt, 1st on bee fixtures; 3d on wax.

CULINARY.

W. E. Rockwell, Bloomfield, 1st on cookies and gingersnaps; 1st on pickles; 1st on canned fruit; 3d on muffins; 3d on cake.

Mrs. L. W. Adams, Hartford, 1st on muffins; 2d on cake; 3d on cookies and gingersnaps.

Mrs. A. W. Yates, Hartford, 1st on cake; 3d on canned fruit; 3d on pickles.

Mrs. L. E. Rockwell, Bloomfield, 2d on cookies and gingersnaps; 2d on pickles; 2d on canned fruit.

Mrs. Dickinson, Hartford, 2d on muffins.

NOVICE DEPARTMENT.

This department is open only to those who have not before exhibited, and is an excellent arrangement to encourage new exhibitors.

W. Beeman, Bloomfield, 1st on sections; 2d on light extracted; 2d on dark extracted; 1st on chunk honey; 2d on wax.

J. E. Wallbehoff, Weathersfield, 1st on dark extracted; 2d on chunk honey; 1st on wax; 3d on light extracted.

L. W. Adams, Hartford, 1st on light extracted; 3d on dark extracted; 3d on chunk honey.

A. Hoffman, Hadlyne, 2d on sections.

St. Clair Burr, Manchester, 3d on sections.

C. H. Clark, Cobalt, 3d on wax.

Special premiums for meritorious articles:

G. S. Whitten, Hartford, \$2.00.

R. H. Noble, East Hartford, \$5.00.

The writer carried away very pleasant recollections of this short visit with the Connecticut beekeepers at their exhibit, not to mention a full dose of enthusiasm, and feels like urging every State association to "go and do likewise."

New Egypt, N. J., Sept. 16.

HONEY AND WAX EXHIBIT AT THE OKLAHOMA STATE FAIR

BY F. A. GAREE

The engraving shows our honey and bee exhibit at our State fair this year. In the foreground at the right is a large sunflower made of beeswax. Next is a picture of A. I. Root, framed in beeswax, and at the left is the Lord's prayer, written on a beeswax platter, with beeswax strung out in threads

and laid on so as to form the letters.

The centerpiece in the display is a large frame of solid beeswax with frame of honey in the center, and above it slabs of beeswax and two shields. The eagle on the left was made with petals of pressed flowers.

Noble, Okla.



Exhibit at the Oklahoma State Fair in 1913.



Three-year-old apiary of Frank M. Foster, Mt. Blanchard, Ohio.

A GOOD START IN ONLY THREE YEARS

BY FRANK M. FOSTER

I am sending a photo which shows a portion of our yard, which we started three years ago. This venture has proven to be one that has given pleasure and that has yielded a handsome financial profit each year.

As you can see, I caught my younger brother in the act of looking into one of the hives. He is very enthusiastic over the bees, the same as myself, and expects to help me when I get my outyards established.

Mt. Blanchard, Ohio.

WINTERING IN LOW SHEDS; FEEDING LOAF SUGAR

BY L. C. LE MAY

My experience in wintering bees has been very successful. I built a bee house or shed facing the south that will hold six hives, with the front end of the hives exposed to the weather. The hives are spaced about 8 or 10 inches apart, so as to allow packing around the sides and back with leaves or other material.

The roof or cover is sloped a little to the back and hinged on the front, so it can be raised at any time to examine the hives, and is high enough above the hives to admit a full-depth extracting-super or two section-honey supers. I make a light frame out of $\frac{1}{2} \times \frac{3}{4}$ -inch pine with a brace across the middle to strengthen it. This I cover

with ordinary wire netting and fit it into a $4\frac{1}{4}$ -inch plain section-honey super so it will rest on the tin strips that go across the ends. If the screen is tacked on the upper side of the frame it leaves about $\frac{3}{4}$ or $\frac{7}{8}$ inch of space above the brood-frames when placed directly on the hive-body. This makes a fine clustering-place for the bees in winter. By raising the cushion or packing, whichever the case may be, I can see the bees, the amount of stores, and the condition they are in, without disturbing them.

I have looked at my bees every month in the year (always on a pleasant day) without disturbing them in the least. If it looks as if they were running short of stores I

put a few pounds of cube sugar right on top of the netting and under the cushion or packing. I have had very good success with cube sugar for winter feeding; and although some may crumble and sift down through, it doesn't amount to much. It is not very expensive, and saves the bother of making or experimenting with other kinds of winter feed.

The packing material above the brood-nest absorbs the moisture that generates in the hive, and keeps the brood - chamber dry and sweet all through the winter.

I have never lost a colony wintered in this way, and the bees always come out strong in the spring.

I consider it a great advantage to be able to see the bees, and feed them if necessary, during the winter without disturbing them.

If the spring is very late, or the weather is bad, I can leave them packed in the shed just as long as I wish. This is a great help in rearing early brood, and also securing early honey by putting on a super as fast as the bees need it.

If the hives were exposed to the open on cold spring nights the bees would not carry

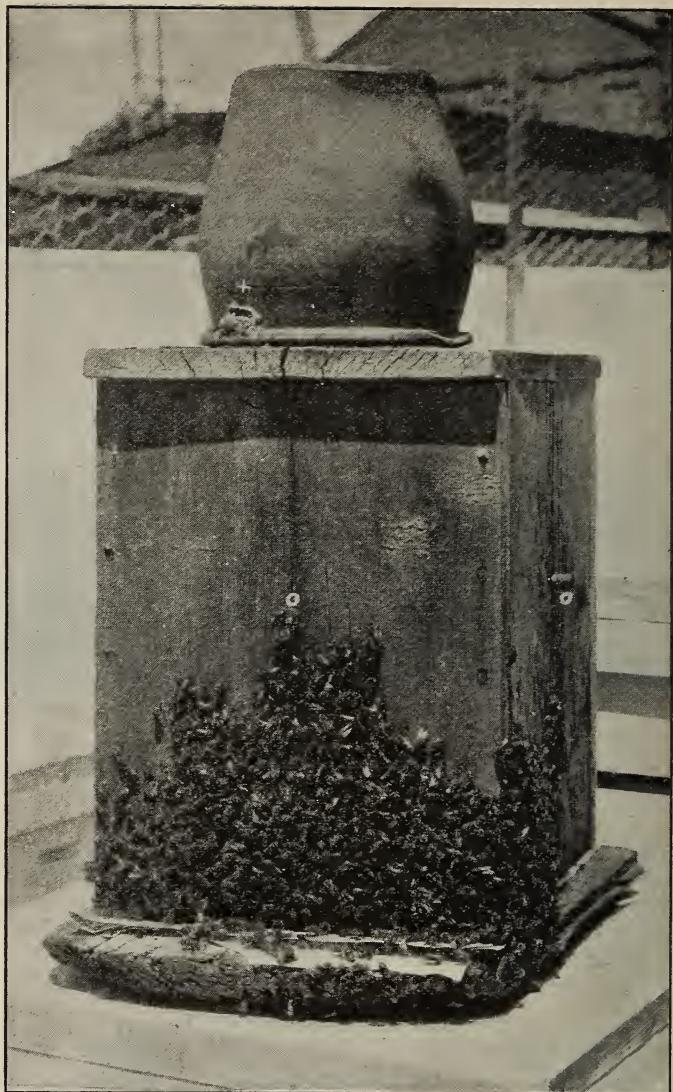


FIG. 1.—Old box hive with a super made out of an old crock.

the honey above nearly as fast as when the hives and supers are protected and warm.
West Hartford, Ct.

SOME INTERESTING PICTURES

BY CHARLES Y. HAKE

I am sending several photographs of combs and old hives that I have photographed.

Fig. 1 is an old box hive with stone crock for super. The mark X on the crock is

where a wasp has built a clay cell. The two marks O on hive-body are where two sticks are run through the hive, crossing each other to hold up the comb.

Fig. 2 is another old hive split in two,

showing the two sticks crossing each other to hold up the combs.

Fig. 3 is a view of surplus stored in a common box, used as a super on an old box hive.

In Fig. 4 the comb with the large drone-cells partly capped with honey is a wired frame that by mistake I put in a hive without any foundation whatever. The other one is a frame that contained a full sheet of foundation drawn out into worker comb. The frame without any foundation was at the side of the hive, the last frame. Had I made the mistake, and placed it in the center, it would have been filled with drones, I suppose.

About porticos, I will never be without them. I am using one in front and at back for protection from heat and especially rain. In hot weather I take the movable end piece out for ventilation. Before using porticos in front or back, I have lost at the least a quart of bees from several colonies when a rain came up, especially at night

when they cluster out like a swarm.
York, Pa.

THE TEN-FRAME HIVE TOO SMALL FOR EXTRACTED-HONEY PRODUCTION

BY D. L. WOODWARD

Mr. George M. Huntington's article, page 215, March 15, "Extracting from the Brood-combs before the Honey-flow to Give the Queen Room," is an incentive to me to write a few words along that line. Right here I want to say that I heartily agree with the editor's note, that "locality is practically the whole thing." In some localities it may be necessary and practicable to extract before the flow in order to give the queen enough room, and in other localities (my own for instance) it is far from necessary.

My main trouble is to get my bees to store enough honey in the brood-chamber to carry them through to the next honey-flow.

For some time I have been of the opinion that the ten-frame hive is not large enough where running for extracted honey. If I were to start all over again I certainly would adopt the twelve-frame hive. For me to change now would mean too great an expense in money and labor, as I have some 300 colonies in ten-frame hives, and over 700 supers with drawn and wired combs.



FIG. 2.—Another box hive split open, showing combs in the brood-compartment as well as those in the super.

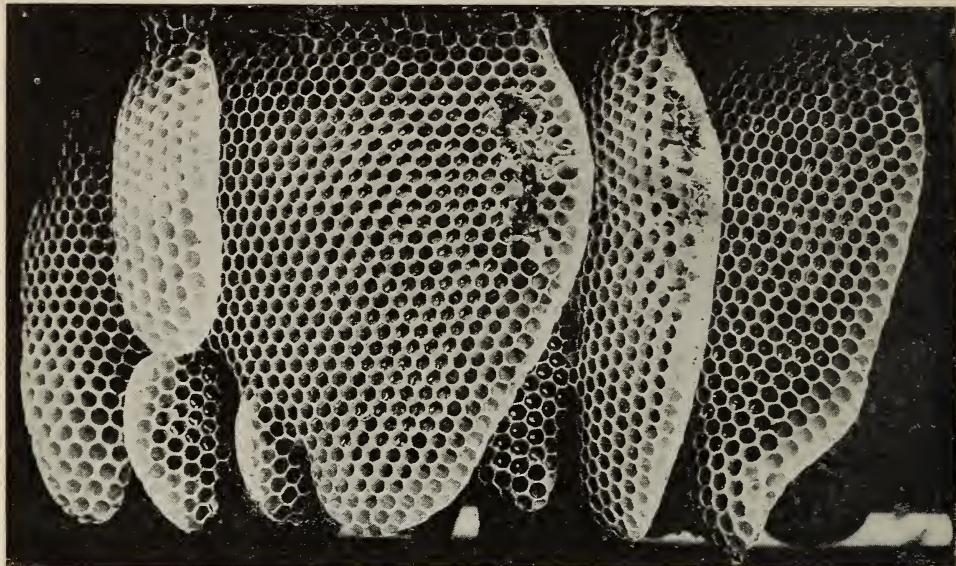


FIG. 3.—Interior of box used as a super, showing naturally built combs. Note that some of the combs are built with two parallel sides of the cells vertical, and some with two sides horizontal.

With us we have the summer flow of white honey and the fall flow of buckwheat, the latter being the heaviest flow as a rule. I find that, with the ten-frame hive during the buckwheat flow in August, in most cases where there is a good prolific queen there will be from eight to ten frames filled with brood, leaving very little room for honey; consequently the honey all goes up into the supers; and if it happens, as it has for several years past, that the flow shuts off suddenly, due to one cause or another (generally a drouth at that time of the season), the bees will be short of stores; for with us buckwheat is the last of the honey-flow except for a limited amount of wild aster and a little second-growth sweet clover. By using a twelve-frame hive the queen would require no more room for brood than in the ten-frame hive, and there would be two extra combs for winter stores. In the spring the brood-chamber should be contracted down to six or eight frames by using a heavy division-board and putting the empty combs to the outside. In my opinion it will not be many years before the twelve-frame hive will have taken the place of the ten-frame as a standard hive.

When our bees went into the cellar, December 20, they had several combs of brood, and in some cases the queens were still laying; but a number were so short of stores that it was necessary to feed them.

My best colonies are the ones that have plenty of honey in their hives in the spring.

I do not practice stimulative feeding in the spring. I believe it is better to let nature take its course; and if there is plenty of honey in the hives when the bees come out of winter quarters I'll risk but that you will have rousing colonies by the time the flow has come, providing you have a good young queen in the hive. Understand that I am speaking for this locality in New York.

As I have some foul broc in my apiaries I do not feed much honey, but use sugar syrup, as there is too much risk in feeding honey from a yard where there is disease, unless first boiled. Two years ago I had considerable disease among my bees; but to-day I have only a few colonies affected. In 1912 I treated over fifty colonies during the season; but later on a few more affected colonies appeared, and were treated in the spring of 1913. No more disease appeared until August, and I thought I was rid of foul brood; but in August, toward the close of the buckwheat flow, I discovered several colonies that were slightly affected; and as it was too late to treat them I removed them from the yard, and left them to be treated this spring. I am in hopes to stamp it out entirely this season.

I have a simple system of keeping track of my diseased colonies. Some who have disease in their yards may think it worth trying. I take some small-size roofing-caps and dip them in blue paint (any color will do); and when I discover a colony that is affected, I tack two of these blue caps on

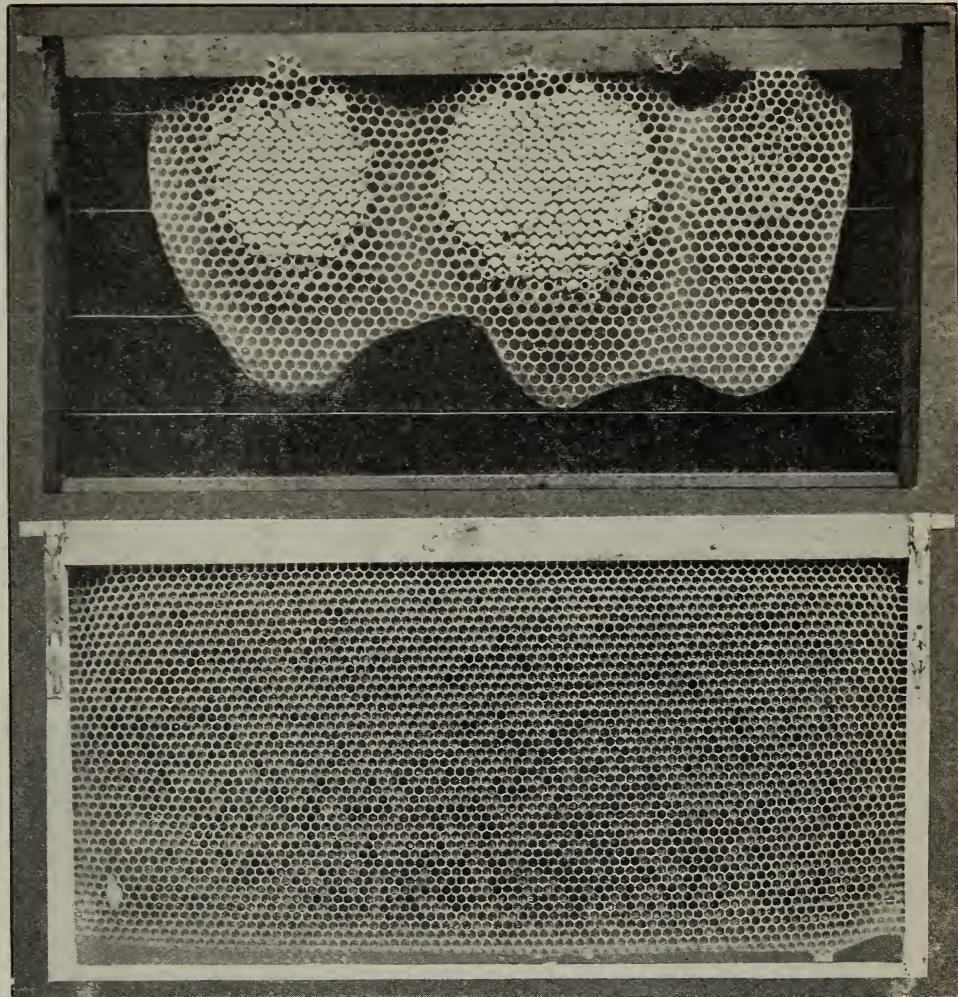


FIG. 4.—The upper frame, by mistake, contained no foundation, although it was wired. Note the drone-cells. The lower frame contained a full sheet of foundation.

the rear right-hand corner of the hive. If they are only slightly affected they will oftentimes clean up of their own accord during a good honey-flow. If so, I remove one cap, the remaining tag showing that the colony has been diseased but has cleaned up. Such colonies are watched closely; and if disease appears later, as it often will, the second tag is again placed on the hive. After a colony is once diseased one tag always remains on the hive until the colony is treated. In most cases where there is once disease, and they clean up, it will appear again some time. I have had slightly diseased colonies that cleaned up and showed no signs of disease the following year; but the second year it appeared again

much worse than the previous time. Of course the blue tags do not tell what year the colony was diseased. That part is taken care of on a record-tag which is nailed on the same corner of the hive, and which will be described in a later article.

As this has happened time and time again, I have given up letting the bees clean up themselves; and if they are only slightly affected, I remove the affected combs, replacing with foundation. I do this only when there are but a few diseased cells on one or two combs. If more combs are diseased, I treat them at once, and put the diseased combs away in a bee-tight room to be melted up later.

I formerly burned out the hive-body,



The Blakeslee Farm near Medina showing the border of basswoods at the left and the old windmill in the distance which was used as power for running the printing press when GLEANINGS was first started.
A closer view of the old mill is shown on the cover of this issue. See editorial.

bottom-board, and cover with a gasoline-torch, where there had been disease in them; but I have come to the conclusion that it is not necessary to do so, and have abandoned that part of the process. I know

that some of the old-line beekeepers will scowl and shake their heads at this; but I am confident that my bees do not get the disease from the hive.

Clarksville, N. Y.

NEW APIARIAN LABORATORY AND EXPERIMENTAL APIARY

BY DR. E. F. PHILLIPS

I take pleasure in sending GLEANINGS a photograph of the new laboratory for the bee-culture investigations of this Bureau. This building has been occupied by this office since July 1.

The laboratory is located in a suburb of Washington named Drummond, across the District line in Maryland. It is located

The new laboratory is a building constructed for private residence, but admirably suited to our needs. We have eleven rooms, basement under the entire house, and an attic, hot-water heat, gas, electric lights, water, sewer, and all modern equipment. The house is located on a lot of about three-quarters of an acre, giving us abun-



Experimental Apiary and Apiarian Laboratory of the U. S. Government at Drummond, Md.

about seven miles from the center of the city, and the trip can be made easily by electric car (Wisconsin Avenue line, running on F Street). Cars leave Fifth and F Streets every fifteen minutes during the day. At the end of the car line there is a short walk, the laboratory being next to the last house on the right-hand side of the only street in Drummond. All mail, telegrams, express, and freight should be sent to the Department of Agriculture, Washington, D. C., as formerly.

dant room for the apiary and other outside work. The lot was beautifully planted by former occupants so that we have a rather finished establishment and are not compelled to wait until trees and shrubbery can grow before the place is attractive. The photograph shows this, and indicates that our surroundings are ideal.

The establishment of this laboratory in the suburbs marks a large step in advance for the investigations in bee culture of this Bureau. We formerly had offices and lab-

oratories in the city with the apiary eight miles away. Then the wintering work was carried on at the University of Pennsylvania, Philadelphia, because of a lack of facilities in Washington. Furthermore, the laboratories in Washington were not all in the same building, but were separated about a mile. All of this caused a considerable loss of time and useless expenditure of money; and the placing of all of this work in one place has increased the efficiency of the work incalculably. The wintering work will be carried on in the basement, and also on colonies out of doors. The instruments

adapted to and devised for this work have been removed from Philadelphia, and are now in place in the new laboratory.

Having at last obtained creditable quarters suited to our needs it will be an exceptional pleasure to have our beekeeping friends come to see us. I have made the directions sufficiently explicit so that we can be reached. We can also be reached by telephone on the Washington exchange (Cleveland 998).

[A front view of the laboratory will appear on our cover for Nov. 15.—ED.]

BARK SHADE-BOARDS THE BEST IN THE WORLD

BY MAJOR SHALLARD

I am sending two photos—one of our Australian stringy-bark shade-board on the hive, and the other of "yours truly" just lifting one off a hive. You will note that I still use quilts. I think Dr. C. C. Miller does also, so I feel that I am in good company. It is not wise to prophesy before the event; but I think the bee world will go back to quilts.

With regard to this stringy bark, it is stripped off the tree, the sheet worked about over a fire, sap side down, and then put flat on the ground, with weights on until it dries as flat as a board. It makes splendid dwellings of a rough sort for the bush; but its principal merit is that it is a non-conductor of heat; and on the hottest day a bark "humpy," if it has a dirt or concrete floor, is as cool as the proverbial cucumber. For this reason it is invaluable for shade-boards for hives.



Australian stringy-bark shade-board; cheap, and almost perfect non-conductor of heat.



Major Shallard lifting one of the bark shade-boards.

I am enclosing a third photo showing the tree growing. The two stumps in the foreground are stringy bark, and the tree in the center is of the same variety.

South Woodburn, N. S. W., Australia.

SOME HIVES MADE BY L. L. LANGSTROTH STILL IN USE

BY JOSEPH G. BAIER

Just to go the boasters one better yet (best yet, I think), let me say this about hives of ancient times, referring to p. 448, June 15. I have several that I am sure are over 44 years old; but one in particular is made of the lumber that Rev. L. L. Langstroth himself made with his own hands in 1851 at Flushing, N. Y. In that year and place you will remember he had the support of Mr. Parsons in his experiments. He obtained permission to Italianize all colonies near at hand. In the grounds of the old Flushing Institute, owned by Mr. Elias A. Fairchild and Mr. Allen P. Northrop, the hives were all made Langstroth type by Mr.

Langstroth personally. These same hives of his old dimensions were in use till 1902 —51 years.

In 1902 I purchased six or eight of the old colonies. I cut down the old hives to present standard L. dimensions. Be it remembered Mr. Langstroth's first hives were about two inches longer, about $\frac{3}{4}$ or 1 inch higher, and a trifle wider than the present L. hives. One of the hives had his autograph and the date, 1851, in pencil on it. But at this moment I do not remember whether it was inside or outside, or just where. I painted my hives very well after rebuilding, and have lost track of which one; but I am still using the same hives with a considerable number of newer ones. Those old hives were almost identical in shape with the dovetailed hive of the present, and had a telescope top. I made most of them of the same type, and still like it best.

Now whose hives are oldest? It looks like one Baier (pronounced Byer) against another Byer.

ANCIENT WAX COMBS.

In the A B C book, I believe, and in GLEANINGS at times, I think I have read discussions about how long combs can be used. Well, when I started to run the Flushing Institute apiary as the younger enthusiastic assistant of Mr. A. P. Northrop, I transferred a great many combs by cutting out the best pieces and wrapping string round and round for temporary support in standard frames. Some of those frames, Mr. Northrop told me, were probably as old as the hives, for he did not "tinker much with what was working all right," as he put it. I have some of those same combs in newer frames. I have had them 18 years. I am sure they were more than that old when I got them in 1896; and, though there is no positive evidence of it, I think it a fair presumption that some are probably the same as were used by bees for breeding purposes away back before the Civil War of 1861—many years before I was born.

New York City.



The tree from which the bark for shade-boards is obtained.

VARIOUS USES WHICH MAY BE MADE OF PROPOLIS

BY DR. L. A. SIMMON

It has often occurred to me that few beekeepers know the value of propolis. It is a resinous substance secreted by plants and trees, and gathered by the bees. It is soft when first gathered, so that the bees

may use it to glaze the combs, to repair breaks, and to stop holes and crevices which are smaller than a bee-space. I have even known them to cover the under surface of a wire screen over a super, rendering it air

and water tight. Propolis is antiseptic, as are all the resinoids and terebenthinates.

Much of the secret of the cure of foul brood by the Alexander method is due to the bees cleaning up and glazing the cells with propolis. In case of infectious disease in our homes, we clean house and fumigate. The busy bee is none the less wise by instinct. Give bees an old moldy dirty comb and they immediately proceed to clean it up, and then varnish every particle of its surface with propolis, nature's antiseptic varnish and glue.

When hives are neglected for a long time the beekeeper is apt to find more propolis deposited about the angles of frames and covers than is convenient to handle. However, I am always glad to find a good supply, and willingly take the time to save it. I use it for various purposes.

PROPOLIS AS A HEALING SALVE.

When melted and strained it forms a hard brittle mass. Melted and mixed with an equal measure of linseed oil, and boiled for a minute or two, it produces one of the most healing salves. The product is not

sticky nor adhesive like a varnish, but is soft, melts with body heat, and is velvety and soothing—an unexcelled dressing for chapped hands or any abrasion of the skin.

This is a stock formula: Equal parts of propolis and linseed oil boiled together.

SHOE-POLISH AND LEATHER-DRESSING.

To any quantity of this stock mixture, add sufficient lampblack to give the desired color, and sufficient powdered graphite to give the shine. Mix thoroughly, and apply with a cloth a light coat. Polish as with ordinary polish, using preferably a cloth polisher. This polish is water-proof, restores the flexibility and life of old leather, and one good application a week is sufficient. The polish may be restored as often as desired, when the shoes have become soiled, by rubbing with a polishing-cloth, as it wears a long time. The first application to an old rough shoe will not polish well; but after it is worked into the leather it will give a lasting polish. This is a valuable formula. Try it, and report results.

Auburndale, Fla.

ALFALFA-GROWING IN ENGLAND

BY B. BLACKBURN

As we grow a good deal of alfalfa in this part of England, perhaps a few notes on the question of when to cut the crop may be of interest. It is generally understood that the correct time to cut it is just before it comes into bloom. If left longer the leaves at the bottom of the stems begin to turn yellow, due, apparently, to the sunlight being gradually shut off by the growth overhead. The stems themselves become tough and wiry, and in this state are not relished by stock. The second cutting will also be checked, so that it is apparent that there must be a loss in every way, except, possibly, in actual weight.

On the other hand, it should not be cut too soon, as then the alfalfa will not contain the same amount of nourishment, and there will be a considerable loss in weight when made into hay. The first two crops are cut, therefore, when just coming into bloom. The third and last cut is generally allowed to come well into bloom. As this is very much lighter, there is no after-crop to spoil, and we aim to get as much weight as possible. Owing to pressure of other work such as harvesting, the last cut is often left standing longer than it would otherwise be.

Alfalfa is of very little use to our bees. There was one exception to this in 1911.



Colored plate of alfalfa from one of the government publications in New South Wales, sent by T. G. Adamson, Nemingha, Tamworth, who also supplied the specimens from which the color engravings were made.



Dasheens $6\frac{1}{2}$ feet in height, grown by Bays D. Cather, Pell City, Ala.

We had a long hot dry summer, and the third cut started coming into bloom when only a few inches high. As the crop would obviously be of little use for hay, I let it stand for the benefit of the bees. They had a glorious time, and I believe they obtained

a large amount of honey from this source. Except under unusual circumstances I doubt if alfalfa would ever secrete much honey in this country, owing to the moist climate and the relatively cool summers.

Minster, Ramsgate, Eng., Jan. 10, 1914.

DASHEENS SIX AND ONE-HALF FEET IN HEIGHT

BY BAYS D. CATHER

I am sending a photograph taken Aug. 22, 1914. These are the dasheens which were carried over winter in the dirt in which they grew. The day this photo was taken, some of them were very near 6 feet in height. To-day, Sept. 5, many of them are 6 to $6\frac{1}{2}$ ft.

In the picture the front shows the little Misses Elizabeth Hart Cather and Eulah Ney Cather, with Bays D. Cather and Bays D., Jr., in the rear, all standing full height.

You will notice that the plants and the dresses are harmoniously tropical.

Pell City, Ala., Sept. 5.

A SIXTEEN-FRAME HIVE AND THE PROBLEMS IT SOLVES

BY J. E. HAND

THE ECONOMICS OF HONEY PRODUCTION.

While beehives do not gather honey, the fact remains that economical methods of honey production must result from economical principles of beehive architecture. The acme of hive perfection is not merely to furnish sufficient room for breeding and the

storage of surplus honey, for, aside from these, there are problems to solve that bear directly upon the economics of honey production, and the hive and system that affords the most economical solution of these problems will yield the greater profits. This refers to the increase problem, the swarm-

ing problem, and the wintering problem. It is a deplorable fact that the hives of today are powerless to solve these important problems without resorting to expensive equipment and excessive labor without due compensation, for reasons that will be apparent to those who follow the trend of this discussion.

THE FUNDAMENTAL PRINCIPLES OF BEEHIVE ARCHITECTURE.

The habit of expansion and contraction of the brood-nest is so highly developed in bees that due allowance must be made for this principle in beehive architecture; hence expansion and contraction are the fundamental principles of economical beehive architecture. There are two distinct principles involved, known as "horizontal expansion" and "vertical expansion," and there is a wide difference in the scope of their efficiency. Vertical expansion is chiefly employed to increase the capacity of small hives by tiering up with another hive-body — a relic of defunct sectional hivism that necessitates extra equipment and excessive hive-handling without offering an economical solution of any of the problems mentioned; hence a flat failure from an economical point of view. On the contrary, "horizontal expansion" is the embodiment of principles in beehive architecture that solves every important problem with the utmost economy.

THE HYPOTHETICAL QUESTION.

What is the orthodox limit of expansion of brood-chambers aside from the solution of problems? And how much extra room is required for the solution of said problems? Owing to different conditions existing in different colonies and seasons relative to the amount of honey and pollen stored in advance of present needs, and the amount of drone comb, it is impossible to estimate correctly the number of available breeding cells a hive will contain without seeing it. It is better, however, to have a frame to spare than to restrict an extra-prolific queen, hence in my location the orthodox limit of expansion is approximately 14 L. frames, and an extra capacity of two more frames is required for the solution of the problems mentioned. Viewing it thus, the 10 and 12 frame hives are too large for vertical expansion, and too small for horizontal expansion and the solution of problems; hence they occupy an inferior position in the ranks of economical beehive architecture, for it is the purpose of this discussion to demonstrate clearly that horizontal expansion to a limit of 16 L. frames is the minimum capacity for the more economical solution of the problems mentioned.

THE SWARMING PROBLEM.

Having completed the circle of my experience covering a period of 40 years, during which time I have practiced many different methods of swarm prevention, I am in position to say with a tolerable degree of certainty that *economical* swarm prevention is not a matter of hives or excessive manipulation in shake swarming, removing brood, etc., but, rather, of correct methods of queen-rearing that practically eliminate manipulation, and here is the method: At the approach of clover bloom place all colonies in condition to enter supers by uniting and equalizing, and at the beginning of harvest remove the queen and two frames of brood from a sixteen-frame colony, placing them in an eight-frame hive made of half-inch material, and 12 inches deep. Place a ripe queen-cell in a cell-protector, between the combs of a queenless colony, removing any queen-cells that may be found while looking for the queen. This will prohibit swarms while keeping the brood in tact, and maintain a normal queen-right condition — a psychological condition of contentment and satisfaction that encourages bees to do their best work and lay the foundation for a simple solution of the increase problem.

THE INCREASE PROBLEM.

Unlike the swarming problem, the increase problem is purely a matter of beehive architecture relative to size, for extra large hives are imperative, and here is the method: At the close of basswood harvest, after securing the honey crop, cage the queens in the nuclei just mentioned, and take six frames of brood with adhering bees, from each sixteen-frame colony and place them in each nucleus hive, which will now contain eight frames and the parent colonies ten, and both have laying queens, and will be in condition to do good work on buckwheat and fall flowers. This method gives 100 per cent increase in connection with a full crop of honey with little manipulation, and in turn facilitates an equally economical solution of the wintering problem.

THE WINTERING PROBLEM.

The economical solution of the wintering problem is also a matter of correct principles of beehive architecture relative to hive capacity and correct methods of expansion and contraction; hence 16 frames is the minimum capacity for the more perfect and economical solution of the wintering problem. Here is the method: About September 20 is the time to place bees in winter quarters. Choose a warm day when bees fly freely, and place each eight-frame division

mentioned under increase; hive bees and all on the floor inside of a sixteen-frame hive, the frames extending lengthwise with said hive, thus creating a space of approximately 3 inches between the walls of the two hives, and the extra depth of the inner hive creates a space of $2\frac{1}{2}$ inches under the frames, while a sixteen-frame super holds 7 inches of packing on top of the winter nest. The parent colonies are treated in like manner without changing the outward appearance or position of the hives. A three-inch flat telescopic cover keeps them snug and dry, and the whole outfit costs \$2.50 in the flat at a local planing-mill, made from a good quality of cypress lumber. This lumber is inclined to warp, hence should be painted and corners double-locked to nail both ways.

It is thus that correct principles of beehive architecture minimize the cost of honey production by eliminating expensive equipment and excessive manipulation; and it is thus that the sixteen-frame convertible hive is so thoroughly competent, and the system so well organized in every detail, that the solution of one problem materially aids the solution of the next, thus greatly facilitating the solution of important prob-

lems. The fact that this hive excels in the legitimate office of honey production as well as in the solution of problems proclaims it an important improvement in beehive architecture. After another season's experience with these hives I can suggest but one improvement, and that relates to the supers which have a capacity of approximately 90 lbs., making it extremely difficult to manipulate the brood-chamber when the supers are full. In view of this contingency we are considering the advisability of using two eight-frame supers with half-inch sides which exactly fit the brood-chambers. A slight modification will also enable us to use them in winter also, and still maintain the deep inner chamber. This modification consists of leaving a part of one side open and placing the open sides together on the hives; this modification will be tested next season. Meantime, what few colonies we keep are all in sixteen-frame convertible hives. My brother beekeepers, it is your privilege to eliminate winter losses and minimize the cost of honey production through correct principles of beehive architecture.

Birmingham, Ohio.

THE SIZE AND SHAPE OF BEEHIVES

Some Advantages of a Square Hive Allowing the Super Combs to be at Right Angles to the Brood-combs if Desired

BY CHARLIE A. BROWN

The ideal hive is that one which gives to the bees a substantial home, and at the same time yields to man the greatest convenience in management of the bees. Doubtless a hollow tree, with sufficient space for a large colony, is an ideal home for the bees so far as their own welfare is concerned. It is warm in winter, cool in summer, with half-decayed wood to absorb the excess of moisture. But for man's convenience and profit bees must be kept in some sort of hive. Many different kinds of homes for the bees have been invented and are in use; but, so far as I am able to discover, there are only about three separate principles involved in all of these, the Aspinwall hive being an exception.

These three principles or ideas in hive construction are, perhaps, best represented by square frames, oblong frames, and sectional hive-bodies. For the last few years I have had in use all three kinds, and I am satisfied that none of the three is just the ideal.

My sectional hives have frames $7\frac{3}{8}$ deep, Langstroth length. Such hives in Texas, working for bulk comb honey, may be all right; but for California, running for extracted honey, I don't like them.

I also have in use 200 hives with frames $11\frac{3}{8} \times 11\frac{3}{8}$, 13 to the body. These make a good brood-nest; but I do not like the square frames for extracting purposes. There is no use offering reasons for not fancying either of the above styles of hives, as the arguments against them are well known to the beekeeping public; and it is pretty certain that neither of them will ever become the universal hive.

The Langstroth frame, to my mind, is the ideal except for one little thing. In fact, so far as the frame itself is concerned it is just about the right shape and size for handling; and in actual practice bees winter and breed as well on Langstroth combs as any other. My objection is this: A square hive made to hold frames of Langstroth dimensions is too big to handle, and that

brings me to the point where I must tell you that I believe the ideal hive, when discovered, will be a square one, about Langstroth depth. Now, don't be too hasty in your conclusions. "There's a reason."

All are agreed, I think, that the ten-frame L. hive leaves something to be desired. The eight-frame is not worth considering. It comes pretty near being no hive at all; and if the ten-frame L. hive is not ideal, is the 11, 12, or 13 frame what we want? I do not think that any of them are ideal; but I do think they will be, and rightfully so, the universally used hive unless a practically perfect one is found.

In working for extracted honey I have found that bees, in a good honey-flow, with the combs in the super running at right angles with those in the brood-chamber, are inclined to fill and cap the outside combs first, finishing toward the center. If, by having the section-holders run crosswise of the combs below, they will do this when producing comb honey, we have found something worth knowing. I have never known bees to make ready for swarming with empty comb right over their brood unless a queen-excluder happened to be between the two bodies; but it is no uncommon thing for them to swarm with an empty comb at the *sides* of the hive. Now, if it is a fact that they will not swarm with empty comb over their brood-nest (and I believe that under ordinary circumstances it *is* a fact), and if, later in the season, after they have settled down to work in the section-super, they will not swarm with the sections of foundation over the center of the brood-nest, it is certainly very desirable to have them work from the outside toward the center, for in that case we can always give room and prevent them from ever getting the central part of the super finished until the season is closing.

I have never known bees to work from the outside toward the center except when the combs in the super run at right angles to those in the brood-chamber; hence my belief that the hive ideal will be a square one (about Langstroth depth), so that supers may be turned either way. A hive 20 x 20 in., which would be a square Langstroth, would take 13 frames. Such a hive is too large. I venture to say that very few people would want one of that size. Further, there are very few queens that could keep such a hive filled with brood—not one in a hundred, I think.

Three years ago, when I had come to the conclusion that a square hive would possess

advantages not found in any other, I made one, $18\frac{3}{4} \times 18\frac{3}{4}$, outside measure; cut down in length enough of the regular L. frames to fill the bodies, which just nicely take 12 frames in the brood-chamber (of course I use less in the supers), and so far I am highly pleased with that hive. It is about the limit in size, being equal to an eleven-frame Langstroth, which is just about right for the average good queen.

The best queens I have been able to produce will use from nine to eleven L. frames if they can have their own way. If I were starting again into beekeeping I should want either an eleven-frame Langstroth or the $18\frac{3}{4} \times 18\frac{3}{4}$ square hive.

Any hive, to become the universal one, must be large enough to give reasonable chance for swarm control; it must carry an extracting-super, the combs of which are interchangeable with those of the brood-chamber; and if with this square hive one can put bait sections in the four corners of the section supers, and thus have the bees work from the outside to the center, as they do with extracting-combs, in a good flow I certainly think the square hive will make good with all who try it. Why bees are inclined to work from outside to center when super combs run crosswise to the ones below, I don't know. There are many facts in nature for which human beings cannot account. During a slow flow bees are more inclined to put the honey directly over the brood-nest, even with this cross-comb arrangement; but not so in a fast flow—especially if the brood-combs are at right parallel angles with the entrance.

I wish that some of our leading comb-honey producers, or, more properly speaking, section-honey producers, would try this hive, $18\frac{3}{4} \times 18\frac{3}{4} \times 9\frac{5}{8}$ deep, outside measure, holding 12 frames $9\frac{1}{8} \times 16\frac{3}{8}$. Place it on the bottom-board with frames parallel to the entrance, or try it both ways, remembering that the combs or section-holders in the super must run crosswise of the combs below. Put the bait sections in the corners, and note what happens. If the bees will work from the outside to the center in section supers, I think possibly it will prove to be the hive ideal, for it is large enough, though I think not too large to be practical. The frame, I think, is not enough smaller to lose any of the Langstroth principle; and if ever any hive proves to be superior to a ten or eleven frame Langstroth, I make a guess that it will be just such a hive.

Piru, Cal.

A LARGER STANDARD HIVE

A Square Hive 20 by 20 Inches Advocated

BY A. N. CLARK

The ten-frame hive-body has long been the most popular general-purpose hive for those producing both comb and extracted honey in the same apiary, and may long continue in this role, while the eight-frame size leads among comb-honey specialists. But the extracted-honey specialists, who realize that both eight and ten frame brood-chambers are too small for them, are using, some twelve, some fourteen, and a few seventeen, frames. As yet we have no recognized *standard* above ten frames. The time seems ripe for such a standard. What shall it be?

The eight and ten frame hives are 20 inches long, outside measure, so I suggest that the larger hive for extracted-honey specialists be made 20 x 20 outside measure. Such a hive-body holds thirteen frames. Being square it can stand on the bottom-board with frames either at right angles to entrance or parallel to entrance; and *this adaptability to quarter rotation on bottom-board is no small advantage.*

Mr. A. C. Miller places frames parallel with entrance; most other people place

them at right angles to the entrance; but if one can place them either way as he may elect, without any change in bottom-board construction, you will see a number of beekeepers following Mr. Miller's plan at least a part of the year.

Some extracted specialists, like Mr. Holtermann, for instance, use a twelve-frame body; but why not make it one frame more and have the advantages of a square body?

I do not believe that thirteen frames is too large for a fairly good queen in an average locality. The best yield per colony, and least labor per pound of honey, that I ever obtained, was from hives with fourteen frames in the brood-chamber.

Other advantages of the 20 x 20 body are stability against wind, and symmetrical appearance; a two-story hive being an exact cube, 20 x 20 x 20, when the cover is $\frac{5}{8}$, and zinc-excluder rim $\frac{3}{8}$. Who can imagine a more practical and sensible shape than a cube for economy of construction, manipulation, and saving of bee travel?

Lansing, Mich.

THE POSITION OF THE HIVES IN THE APIARY AND THE HANDLING OF HONEY

BY THE OUTLAW

With my bees on the roof, the accessibility of the bees and the handling of the surplus honey could not very well be more inconvenient. But as with me it is only a hobby, and the matter of using a little surplus energy, these points are not essential. I should hardly care to change them, even if I could. In pondering over the above facts, I think I have discovered a reason why apiarists throughout the country have their hives situated in awkward places, and use the crudest kind of methods in handling surplus honey. This reason is that most beekeepers start with a colony or two; and the manner in which the honey is handled, and the situation of the hive, are of minor importance. As time goes on, and the number of their hives increases, they continue in the manner to which they have become accustomed. An example is the manner of handling honey as advocated by the late Mr. Alexander. He carried combs, when extracting, in a box in his hand, and poked them through a hole in

the side of his honey-house, and advocated it as a good method of handling honey. At several large apiaries in California which I visited several years ago I found that two boxes the size of supers were fastened on the bed of a wheelbarrow. In these were placed the combs on taking them off the hive. On entering the honey-house, the full combs were removed and replaced with empty frames, the boxes being nailed to the wheelbarrow.

In the arrangement of the apiaries throughout the country are continually found examples of the worst possible methods. Some place the hives in inaccessible places, or on ground which is so rough that it is almost impossible to run a wheelbarrow; or, again, you find the hives so close together that they have to be worked from the back instead of the side, or else scattered out from 10 to 20 feet apart. Again, we find them so situated that, when working one row of hives, the apiarist is directly in the flight of the bees from another row. A

good deal of space might be used in discussing the bad features found in the foregoing illustrations; but I consider it far better, in place of so doing, to give my idea as to the points that should be observed in the arrangement of the hives and the manner of handling the products.

REQUISITES OF A PROPERLY ARRANGED APRIARY.

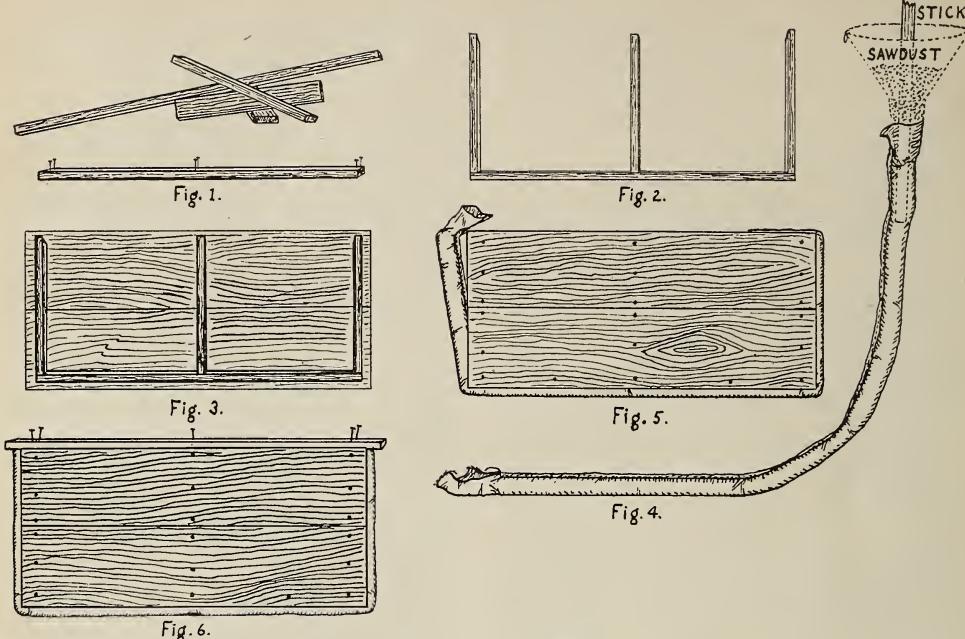
The first requisite in arranging the hives is to have them so situated that it is always possible to work toward the honey-house. At some seasons of the year it is often necessary to go over 15 or 20 hives before securing a load of honey; and the distance that the completed load is to be conveyed will amount to considerable, depending on whether the distance traveled is away from or toward the honey-house. This problem is easily solved by having the rows of colonies radiate from the door of the honey-house, and then always going to the far end of the row and working back. Another feature is to place the colonies, whenever possible, in double rows, back to back, and at a distance of 5 or 6 feet from the back of one row to the back of the other. Although this plan may not be feasible in many northern localities, there is no reason why a colony in any of the southern countries should be placed otherwise. Were I to have the management of an apiary in the North to-day I would at least try the experiment of having rows of colonies turned back to back during the summer months, then turned so as to face east or south during the winter months. I know that many will object to the foregoing, there being a prevalent idea that entrances opening otherwise than to the sun, or if the colonies are placed in the shade, they do not give as good results; but I think this is in a great measure a fallacy. I once paid particular attention to some 150 colonies, 75 of which were in the sun and facing the south, and the other 75 being in the shade and facing north; and the result of my observation was that one row of colonies did just as well as the other. At another time, in one of the Western States, I became acquainted with a man who was, and still is, an extensive producer of honey. He had been a student under James Heddon, and used often to tell the story of how Heddon had a colony under an apple-tree. The colony was absolutely worthless—never did produce a pound of surplus honey. It was the custom of Heddon to send the students to examine that colony and then ask for a report. On being told that the colony was doing nothing, he would tell the students that the reason was that the colony was situated in the shade. On this same

point, however, during the season of which I speak, and at an apiary managed by a former student of Heddon, strong evidence was brought to this man to show that there is very little in the shade theory. As it happened, he took an apiary belonging to a farmer to run on shares. The farmer had started his apiary by catching runaway swarms, and knew nothing of beekeeping. However, he had bought hives already fitted with foundation starters, and his bees had fairly straight sets of combs. All the colonies were placed beneath apple-trees—big spreading trees which had never been pruned. In fact, the hives were situated in about as dense shade as it is possible to find. Now, whether it was the fact that these bees were situated in the shade, or whether it was a good honey locality, or whether they were a particularly good strain of bees, is something I cannot definitely state; but I do know as a fact that these bees, per colony, produced about double the yield of those of the other apiaries managed by the gentleman in question, and he managed some 14 apiaries. Not only that, they continued to do so over a period of years.

HANDLING HONEY FROM THE HIVE TO THE HONEY-HOUSE.

In the manner of handling honey, the place where system and appliances count the most is in a yard that is run for extracted honey. The first thing to be considered is the vehicle, as I do not consider the Armstrong (Alexander) method worthy of consideration. To my mind, there is nothing that is to be compared with a wheelbarrow of the Daisy type. The average man can with ease handle four full ten-frame supers of honey, and can go over the ground with more speed and ease than is possible with any wagon or cart. In some apiaries I have found it the custom to wheel one super at a time, in others two, and, again, I know some husky fellows who never think of starting for the honey-house without six full supers of honey as their load. The best manner of arranging the super on a wheelbarrow that I know (and I think I have seen and tested every possible arrangement) is to place the supers in two tiers, the combs running crosswise of the wheelbarrow. If an ordinary Daisy wheelbarrow is used a brace should be placed perpendicular to the bed of the wheelbarrow against which the supers rest, and should extend about two inches above the second super.

Perhaps it will not be out of place to describe the method of filling the supers. To start, remove the top super of the front tier, thereby exposing the bottom super. Shove all the combs to the back of the



A new and simpler way of making chaff division boards. See editorial.

super toward the handles of the wheelbarrow, leaving the forward part empty so that the full combs of honey can be placed there, making one movement from the hive with the frame of honey and taking an empty frame on the return motion to the hive. When the bottom super is filled, replace the super that has been removed and fill it. The next move is to take the top super from the second tier and place it on top of the front tier, and fill the bottom of the second tier; and here is where the two inches that extend above the second super come into play, as this brace keeps the super from sliding off over the front of the wheelbarrow when it is moved from colony to colony.

ARRANGEMENT OF THE INTERIOR OF THE HONEY-HOUSE.

In the arrangement of the honey-house there are several points to be observed, the first being to have combs moved continually in one direction, or, better, in a circle, preferably to the right. When the supers are unloaded from the wheelbarrow they should be stacked so that the man who is uncapping stands just to the right with his uncapping-tank directly in front of him. The apparatus for containing uncapped combs should be just to the right of his uncapping-tank, and the extractor to the right of the uncapped combs. The extracted combs on being removed from the extractor should again be placed to the right, and in this

way every thing works smoothly, nothing is mixed, and there is no lost motion.

Another matter is the uncapping-tank. Where there are several hundred colonies in an apiary it is advisable to build a big permanent uncapping-tank; but where the apiary consists of a hundred colonies or less, such is not necessary. The best temporary uncapping arrangement that I know of is made of three ordinary supers. On one of the supers nail a one-piece cover and then run a little melted wax in the cracks so that it will not leak. On the next super fasten a piece of ordinary wire window-screen and place this on top of the first super, the first super acting as a tank to hold the honey which drains from the cappings; then place the third super on top of the second one, thus making it a convenient height for the average person to work over. On this third super should be placed a $\frac{3}{8}$ -inch board about four inches wide, cut so that it will rest sound on the rabbets. Two cross-pieces should be nailed to this, that just fit across the super, thus making a solid place on which to stand the combs while uncapping them. This apparatus can be constructed in twenty minutes by a man who is handy with tools and makes an adequate uncapping-outfit; and at the completion of the extracting it takes only a few moments to make the supers again ready to be used for their original purpose.

Heads of Grain from Different Fields



THE BACKLOT BUZZER

The last report from the amateur who named his bees after the great European nations and then left a comb of honey lyin' on one of the hives, was that the Belgians were still holdin' out.

A New Reason Why Bulk Comb Honey Should Not be Called "Chunk Honey"

Having about 1000 lbs. of surplus honey to sell, I decided that it pays to advertise, so the following advertisement was inserted in our local daily papers with instructions to let the advertisement run 30 days.

FOR SALE.—Fine fall honey, goldenrod and Spanish needle flavors. Rich, thick, and delicious. Phone your orders. Price of section honey, 5 lbs. for \$1.00, delivered; chunk honey, 16 2-3 cts. per lb.

HILLCREST FRUIT FARM.

What was my surprise when a customer gave me an order for 5 lbs. of section honey and asked what kind of honey "skunk" honey was, as I also had advertised that. Skunk honey! Upon investigation I found that the advertisement really did read "skunk honey" for chunk honey. Now our reputation is badly perfumed for advertising a really superior article. I hardly see how a careless typesetter could make a mistake on the word "bulk"; but chunk can be made into skunk, and now nobody wants our honey.

Our experience has been that the average consumer is not so critical as to the appearance of honey as he is regarding the quality. We have been able to realize as much per pound for bulk comb honey in many instances as we have for section honey.

The bulk comb honey was produced in shallow extracting-frames, and sold in 3 and 6 pound paper butter-dishes with oil paper for lining and inside wrapper. We have a demand for all we can produce of this kind of honey at 16 2-3 cts. per pound. This is considerably more than the section-honey producer realizes for his fancy white at wholesale prices.

We find several advantages in using the shallow extracting-frames with full sheets of foundation. First the bees start work in them more readily than in the section. Second, they are very easily removed from one hive to another, and a few bait combs are all that is necessary to start work in the super. Third, the frames can be used year after year, and are as easily stored as are the sections.

Washington, Ind.

S. H. BURTON.

Why Bees Leave the Hive to Die when They Grow Old.

A gentleman who was not a beeman recently made this query, putting two questions in one:

"I have heard that old worker bees leave the hive to die. If this is true, what is the physiological principle underlying the act?"

To confess the truth, I felt that, to use a slang expression, I was "up against it." The explanation I made was that which has been suggested in our bee-journals by our supposed doctors of apicultural science, that, when the bee has grown old, when her wings are badly worn, and she realizes that she cannot further do her share of the work of the colony, she merely crawls out into the world to die, placing herself out of the way of the work of the colony, thereby ceasing to retard progress. This explanation in no way fully covered the ground nor gave a definite reason, either to my mind or to the mind of my questioner.

Feeling the importance of the question, or, rather, of a correct answer, I began to theorize, trying to find a scientific reason; for to my mind there is a different dominating power behind the act than that the worker leaves the hive to die for the reason that she is old and not able to work longer, and desires to get out of the way. The departure of the old bee is due to the hostility of the younger bees in the hive; her leaving is justified, and transfers the responsibility to the inmates of the hive.

If, then, the blame is to be placed on the younger inmates of the hive, the dominating cause is to be found back of the bees which perform the hostile acts. The bees would hardly chase out a faithful worker ripe with toil just for the sake of rejoicing in the light-hearted act.

There is something more. It seems to me that it is due to a physiological interruption of the bees' existence, both mentally and physically, in compliance with a natural law governing the perpetuation of its species.

To illustrate, a hen does not sit because she feels it her duty, but because she cannot help herself. When the hen has laid her quota of eggs, interruption, both mentally and physically, takes place. The hen becomes broody, not because she desires to, but because she is overcome by a natural impulse. Nature designs this as a purely necessary act to perpetuate the species; and to my mind just such an impulse is the dominating factor governing the bee.

Bartlett, Tex.

T. P. ROBINSON.

"Laying Worker Caught in the Act"

In GLEANINGS of November 15, 1912, p. 720, I noticed that Dr. Miller had seen laying workers in

the act of laying. I, too, have seen them laying. I was looking for laying workers on a comb, when my attention was attracted by a bee walking backward. I watched that bee, and was surprised to see her lay an egg, after walking in a small circle backward. I saw her do this four times, and each time she either walked backward or turned around two or three times. She did not select a cell and place her abdomen in it carefully, as a queen does, but just pushed her abdomen in anywhere; and she took only about half the time to lay an egg that the queen does.

DOUGLAS BREARLEY.

Subiaco, Perth, W. A., Nov. 12.

Honey from Bitterweed

I have made a few observations during the present season that may be of interest to the beekeeping fraternity. First, the drouth from the last of April to the first week in July was so severe that wells dried up that never had failed before, and farmers had to haul water.

The bees simply sulked, and subsisted on what they had gathered in the spring. No hive could be opened because of robbers, and my table saw no honey until last week.

In July we had a few light showers, and the bees went to work on smartweed, Spanish needle, part-ridge pea, and cotton. They stored about one shallow super to the hive of a very dark but pleasantly flavored honey. Then the drouth returned, and in their desperation the bees worked on the yellow dog-fennel, or bitterweed, that infests our pastures, and makes milk too bitter for drinking. The result was sheets of the most beautiful honey I have ever seen. It is clear, and of a bright canary color, but bitter and uneatable. Fortunately they stored it in separate combs from the dark honey, which rarely had a trace of it. We had to taste every comb before uncapping, so as not to taint the extractor. So I have learned that, at least sometimes, the bees store different honeys separately. I at once replaced the beautiful bright golden comb on the hives for winter feed, three combs to a colony. I know the weed is not unwholesome, for I have often drunk milk that was not quite too bitter from it, and kittens thrive on such milk.

THE BEES KNEW THEM.

One more queer circumstance in line with the color discussion has claimed my attention for weeks. A dark bay mare with black mane and tail, together with her almost grown brown mule colt, grazed day after day among my thirty hives without being annoyed or stung. My hives stand in pairs with about eighteen inches between them, and I have often seen those animals grazing those narrow spaces, and yet, so far as I could judge, the bees did not object, and they are hybrids. My manager, who owns the mare, thinks it is because the bees have known the horses always, and the horses do not shake their heads nor show fear of them. The most incredible circumstance is that no strange horse or mule can graze near the apiary, though outside the fence, without being attacked. As Dooley says, "There ye arre." No, Mr. Editor, you do not have to believe this yarn. I hardly think I would believe it myself if I had not seen it; but it's true, all the same.

Florence, Ala., Sept. 24. H. A. MOODY, M.D.

Use of Propolis in Dressing Wounds.

It would appear that some use has been found at last for propolis, which we beekeepers could more fully appreciate if the sticky stuff could be stored in a mass in some particular place instead of being smeared about. The following is taken from *The Scientific American* of Nov. 1, 1913:

"**PROPOLIS FOR SURGICAL DRESSINGS.**—The resinous substance collected by bees from the buds of trees, and used by them to stop up crevices in the

hives, has just received a novel application in surgery, according to *L'Illustration*.

"When this viscous substance is distilled in the crude state there is obtained a brownish liquid of unctuous consistency known as propolisine. When this is applied, either pure or mixed, with 25 to 30 per cent of vaseline, to the surface of a clean wound, this is covered with a sort of isolating (insulating?) varnish which has an immediate soothing effect, and in whose protection healing takes place under the best conditions. Parvel and Meyer, who have been experimenting with it, affirm that it is very useful in surgery, and, when used on battlefields, generally prevents septic and infectious complications."

I venture a prediction that the supply will always equal the demand. Now, who wants to buy?

Hoboken, N. J.

C. D. CHENEY.

Smoke Plan of Introduction Unsuccessful.

I note that Mr. Miller claims that his smoke plan of introduction is always successful. It has been a failure with me except in a few cases. Here are some of my experiences.

On the morning of August 21 I removed one laying queen from No. 78, and two laying queens from No. 34. In the evening of the same day I introduced laying queens from nuclei to these two hives by the smoke method. On Aug. 22 I found the queen in No. 34 dead, and queen in 78 balled. I released the queen and smoked the bees and closed up the hive for ten minutes again.

On Aug. 24 I looked into No. 78 and found the queen still balled and queen-cells about ready to seal. I smoked the bees away from the queen, and she seemed to be all right.

I then removed the queen from No. 15 and introduced this same queen to this hive by the smoke plan; but on looking into the hive a couple of days later I found the queen missing and cells started.

I used dry rotten wood for smoker fuel.

There was plenty of honey coming in, and no robbing was going on; but there was some swarming.

ROBERT WATT.

Mt. Carmel, Ill., Sept. 8.

Cane Sugar Better for Candy.

In regard to the trouble so many have with feeding hard candy, let them take a tip from a professional candy-maker, and use only cane sugar—never beet sugar.

Seattle, Wash., Sept. 11.

D. D. WHEDON.

The Honey Harvest

BY GRACE ALLEN

Harvesters of wealth of wheat, yellow corn, and oats,
Garnered where the heavy heat in waves of wonder
floats,

What have you in all your harvest, what in all your
fields,
Like unto the honey that the soul of summer yields?
There's miracle and mystery within your golden
grain,

The earth is in it, and the sun, and all the rushing
rain.

But mystery and miracle and rushing rain and sun
Are all within the honey and the tale not well begun!
There's liquid light that shimmered through the per-
fumed-haunted hours,

• There's essence of the romance and the passion of the
flowers;

There's fragrant warmth and winsomeness, with
every drop agleam

With the tenderness and magic of a summer-hearted
dream,

A. I. Root

OUR HOMES

Editor

We be brethren.—GEN. 13:8.
 Peace on earth, good will to men.—LUKE 2:14.
 Thou shalt love thy neighbor as thyself.—LUKE
 10:27.

In honor preferring one another.—ROMANS 12:
 10.

By this shall all men know that ye are my disci-
 ples, if ye have love one to another.—JOHN 13:35.

Our eldest daughter, Mrs. Calvert, always has "good luck" with chickens. She sticks to the Barred Plymouth Rocks, while the four other children have all sorts. Some of them have paid large sums of money for the best grades of the different varieties of fowls. But Mrs. Calvert gets the eggs; and even while her hens are moulting, they always lay more or less; and when the neighbors are out of eggs they can always get some of Mrs. Calvert. I hardly need tell you that the secret of this is that Mrs. Calvert's hens are always well fed and cared for. They never suffer for the lack of water. They know her, and she knows them. I think I might say they love her, and she loves them, and therefore she gets the eggs. There is one other daughter (I will not tell which one it is) who also keeps chickens, or her husband does—that is, he keeps them after a fashion. I do not think he will get mad even if he should happen to read this, for he is a great big good-natured sort of fellow. Well, he is sometimes away from home, and the hired girl is expected to look after the chickens. Now, do not imagine that I am reflecting on hired girls as a whole when I say this, for some of the best friends I have in the world are hired girls.

Let me now digress a little, as I often do.

When I first became acquainted with Mrs. Root, when she was fifteen years old, her good father did not take much of a fancy to my poor eccentric self; but as years passed, and I showed him the microscope (microscopes were a hobby with me at the time) he began to take more kindly to me; and after Mrs. Root and I were engaged he once volunteered something as follows in regard to the young lady. Said he:

"Mr. Root, you may be sure that no person nor any domestic animal will ever go hungry when Susan is around. Her special forte is to see that every thing is well fed and comfortable, etc."

He might also have added they will have plenty of good water to drink.

I have told you how Mrs. Root "gets mad" when she cannot have plenty of good pure air. Well, it is so in regard to good pure cold water; and one of her hobbies is

that the domestic animals shall have plenty of *good* water. If the horses are tired and thirsty she keeps urging us to stop and give them drink. If the chickens act uneasy as if they wanted something, she will say, "Are you *sure* they have plenty of good water?"

Not long ago a pen of Rhode Island Reds not very far from our home rushed up to the poultry-netting fence when she happened to be near the yard, and acted as if they wanted something. She crossed over to the neighbor's, looked in the fowls' water-pail, and found it was entirely empty, and had been so, nobody knows how long. The folks had forgotten all about the chickens; and, although they have a larger flock than Mrs. Calvert, it is the same old complaint—"the hens don't lay."*

May be you think, friends, that since I am within a few days of being 75 years old, I have forgotten myself, and put that string of texts over the Poultry Department; but don't you worry. I will get to the texts in due time. But I have not got through with poultry yet. *Our* chickens are down in Florida. We do not keep any here in Ohio, so we have to buy our eggs; and the place to get them, as the neighbors all agree, is of Mrs. Calvert. She not only has some eggs to spare, but they are larger eggs than any other eggs in our neighborhood, always fresh and fine flavored, and, as a matter of course, Mrs. Root went over to get another dozen eggs, and the conversation was something as follows:

As this is moulting time, eggs are up in price. They are quoted at 27 cents. That is what the grocers pay. They pay 27 and sell for 30. So Mrs. Root tendered her daughter 30 cents for a dozen eggs; but Maude said:

"Oh! no, mother. Eggs are quoted at only 27 cents, and I am not going to take more than that."

"But," replied Mrs. Root, "the 27 cents is wholesale. If we go to the grocers we have to pay 30 cents, and even then we do not get eggs like yours here. You keep the 30 cents."

* While reading the proof of the above it just occurs to me that there are two things I failed to mention. The first is, that when Mrs. Root carried them a pail of nice fresh clean water they drank and drank and *drank*, as if they never would get enough nice cold water. The second point I started out to make is that the daughter Maude is a "chip of the old block." (Recall what the good book says about the "third and fourth generations.") May the Lord be praised for the promising "chips" that our good mothers have scattered throughout our land, and, I trust, throughout the whole wide world.

But Mrs. Calvert replied, "Well, if I take 30 cents I am going to give you more than a dozen eggs."

I really do not know how they settled their differences. I am not particularly interested, in fact, in regard to the outcome. What interests me is that Mr. Calvert, who overheard the discussion, came forward at this crisis, and, going up near his mother-in-law, he looked down at her with his genial and contagious smile and said:

"Mother, if all the world could settle their transactions in the way of buying and selling as you and Maude do, what a happy world this would be to live in!"

Now, friends, I am sure you can see here where the texts come in—the first one particularly, and I rather think all the rest. If all the world could feel toward each other as mother and daughter usually feel (and all *ought* to feel), would not this world be a happy one indeed?

When Mrs. Root repeated to me the little incident it was a rebuke and a reproof to my poor self. Once in a while I get to feeling so kindly toward this old world that I come pretty near loving my neighbor as myself.

When keeping chickens down in Florida, especially about moulting time, when eggs hardly pay for the feed, I can hardly help feeling glad when they get up to 40 or 45 cents. Well, later on, when the hens get to laying, and the price gets down to 20 cents, I ought to feel glad also, because it makes it easier for poor people, and I *do try* to feel glad.

Last winter I was hunting for a peculiar kind of clasp envelope in which to put the dasheen tubers for the readers of GLEANINGS. After hunting all over the town, I finally found something I thought would do, and took a sample home to try. The young printer (recently started), before he found just what I wanted, spent quite a little time in overhauling things on the top shelves, etc. He was a busy man; and instead of waiting for the few cents change coming to me I told him to keep it for the bother he had been to in *hunting up* what I wanted. His face softened into a smile, and he seemed astonished to find a customer who was willing to pay more than the price named, even if he did have to stop his presswork to wait on me.

I have told you once or twice about a beekeeper who was going to have an extensive lawsuit with a certain wealthy man who declared the bees a nuisance. When the lawsuit was under full headway the beekeeper's daughter and the rich man's son (regardless of consequences) fell in love

with each other. The two fathers stormed and scolded; but the young people came out ahead, and the two belligerents shook hands and became from that time forward the *best friends in the world*.

You may suggest that it is all right for relations to stick together and "do good, and lend, hoping for nothing again." But when I undertake to declare the great outside world should deal with each other, say like mother and daughter, I have a big job on hand. Yes, my friends, we have a *big* job on hand, and I willingly admit that it is something that can never be accomplished in this world without "the love of Christ that constraineth us."

Our various secret societies have undertaken to do what we are considering, without the help, or any particular help from Christianity. But I object, and always have objected, on the ground that all secret societies discriminate against some and in favor of others. I always reply that I cannot consent to join any thing that does not embrace the whole wide world. I belong, body and soul, to Him who said, "Love ye your enemies, and do good to them that hate you."

Just now there is a lot of jangling and differences in the way of getting the necessities of life from the producer to the consumer. If the producer and consumer could get together with the same feeling that I have mentioned between mother and daughter, what a relief it would be! There would be no room for crowding, no room for bribes and bribe-taking, no room for stealing, because nobody would want that which he had not honestly earned. Let me digress again.

There is in the city of Cleveland a husband who, with his wife, came here several years ago from the old country. Perhaps on account of prejudice they had a notion that our banks are not safe. They had together scraped together about a thousand dollars, and were looking about for a little home they could buy. To be sure and have it safe, the wife carried this amount of money in a pocket in her clothing, and in some way the secret got out. Two burly men invaded the home when the husband was away, knocked the woman down, and secured the money. Then a discussion arose as to whether they had not better kill her, for fear she might identify them; and this poor woman, to save her life, feigned death. One of the burglars suggested that he give her three or four strokes with his dagger to make *sure* she was dead. The other gave her a brutal kick, and said, "Oh! she is dead all right. Let us get away." What do

you think of the wretches who took the honest earnings of these two poor hard-working people? How does it come that there *are* such people? and especially how does it come that we have so many cases reported almost as bad as the above, almost continually, in the great city of Cleveland? I reply as I have replied before, that it is the outcome and legitimate fruit of the saloon traffic. This Home paper will not meet your eye, probably, until after the campaign that is now stirring the State of Ohio as it hardly ever has been stirred before, is over. While I write (Oct. 14), God only knows the outcome. Now, friends, is it possible that any one can vote wet who has the feeling in his heart toward his fellow-men, such as I have tried to picture in the outset between daughter and mother in this little story? Is there any thing in this whole wide world that will ever root out self and selfishness, that will do away with wars and rumors of wars, as will the gospel of Jesus Christ that we are endeavoring to plant among all people all over this whole wide world of ours?

There is considerable complaint along the line of the high cost of living, to the effect that grocers are charging too much; and when it is sifted down it seems that, since the advent of the free delivery of groceries, and every thing else, that grocers *must* charge a higher price. To illustrate this, yesterday's daily told of a merchant, I think somewhere in Kansas, who had two stores side by side. From one of them one could order by telephone and have the stuff delivered. From the other store, however, he must take a basket and go to the store and get his stuff, *pay cash*, and carry it home in the old-fashioned way. Well, this merchant advertised that one could have every thing in his stock right straight through at ten per cent less if he came and got it himself and *paid cash* down. Now, I think this, if it is true (and I hope it is), is a big object-lesson.

A good deal has been said about buying of the department stores. You know their terms are, "spot cash first: goods delivered afterward." They have no bad debts—no losses from people who do not pay. Years ago good Christian men tried again and again to start a cash store—spot cash from everybody; but it is a hard matter unless you have two stores, as illustrated above. Just one more illustration:

When I was a business man on the street, my next-door neighbor started a spot-cash grocery. He sold cheaper than anybody else. One day one of the richest and most influential men in the town came for some

butter just before dinner-time. He then discovered that, in changing his clothing, he had left his money at home. What should my neighbor the grocer do? He would have to make a break in on his invariable rule or he would have to offend one of his best customers. He chose the latter alternative. The butter was placed on the counter, and his good friend the customer traded elsewhere after that. May God help us in our efforts to solve in a Christianlike way this unending stumblingblock of dealing with people who *do* not or *can* not pay.

Suppose, friends, that not only individuals, but great business firms—their rivals in business—should feel toward each other and do business with each other as do the daughter and mother I have mentioned. Would it not be a happy world to live in? And, finally, suppose the great nations of the earth should come to a point where even they could deal with each other and settle differences in that same spirit—"peace on earth, good will toward men."

WHEN GLEANINGS WAS PRINTED BY WIND-MILL POWER.

When this journal was first started, it was for a time done by the power of the wind. I think, friends, with your permission, I will go a little further back. In my childhood I was very fond of investigating the forces of nature. Close by my boyhood home in Mogadore, Summit Co., Ohio, was a little stream fed by soft-water springs. As soon as I was big enough to play in the water and build a dam I had a little waterfall, then a waterwheel; and it did not take very much ingenuity to put a crank on the end of the shaft of the waterwheel, and a little later a rude sawmill was rigged up in imitation of the water-power sawmills so much used then, for cutting lumber. A little later I read in the geography about windmills over in Holland for grinding grain and pumping water. I also read somewhere, or somebody told me, they made the sails of cloth; and as we lived on a little hill where there was a good breeze, I soon had a windmill with cloth sails that would actually run my mother's old-fashioned spinning-wheel.

About 1852 my father moved back to Medina Co., where he had a little farm in the woods. I think I shed some tears when I was called on to leave the babbling brook that ran my sawmill, and the ducks and chickens I was already interested in. At the same time I had made some progress in electricity. I had a galvanic battery of home manufacture, but it did not work

exactly as I wanted it to. When I got to be a little older, and got hold of the proper books on electricity, I ran my sawmill by electric power in place of the babbling brook; and this last sawmill was portable. I have told you how I took it around to schoolhouses and gave "lectures." About the same time, I constructed a windmill with cloth sails as before; but I put it on top of a pole and made it pump water from our well, and churned the butter for my good mother. With seven children to look after she was very glad to be relieved of any part of her household duties. At the time I made my first windmill there was scarcely a windmill to be seen in the whole State of Ohio. I think there were a few in the far West on the big cattle-ranches for pumping water for the stock. My home-made windmill worked all right and attracted much attention far and wide because of its novelty until a heavy wind blew it down. I do not know but I shed some tears again, even if I was a pretty good-sized boy. But my attention was turned to something else until I got hold of bee culture, as I have been telling you of recently. During all the years, however, between my experiments with wind, and up to the time I had a printing-press for printing GLEANINGS, I was interested in windmills. I looked at the pictures in the agricultural papers with which I have always been in touch more or less, and sent for price lists and circulars. I have always had a great fondness for automatic machines, or things that would go of themselves. My grandfather on my mother's side worked for years on the problem of perpetual motion; and I used to stand for hours by his side and listen to his theories about making a machine that would go itself when once started.

The first two or three issues of GLEANINGS were printed at our Medina printing-office—a rather small affair at that time; but it did not suit me. I ached to get hold of the type and the paper, and make it just as I wanted it. I scraped up money enough to buy a second-hand foot-power press, and hired a printer to give me instructions. We got on nicely until the subscriptions began to come up, as I have explained; and when I was admonished that I needed some kind of power, my mind reverted to windmills. Little gasoline-engines were unknown before the year 1875. I got hold of an advertisement of a windmill made, I think, somewhere in New York. I believe it was called the Halliday. The building I owned was a three-story brick; and with the windmill on top of the building I thought I could get a pretty good wind. Sometimes

it was a little *too* good, as you will notice later. Well, when we got it all rigged up it worked tiptop except that the press had a very irregular speed. Sometimes it was very slow work feeding the sheets of paper; but before we knew it we would just have to hustle to get the sheets fed in properly. Then if the wind stopped blowing for an interval the pressman had to stand still and wait. To obviate this trouble I had a device so I could run it by foot power when the wind did not blow, and a sort of ratchet-wheel so when the wind came up it would take the machine out of your hand, or perhaps, better, out of your *foot* which might be getting tired. Well, I greatly enjoyed this until our subscription got up to such a point that the press *had* to be run, wind or no wind, to get the journal off on time, and I was *always* a great friend of punctuality. And this reminds me that just a few days ago I happened to go through the pressroom where the girls were folding up journals over a week after the date they should have been mailed. For a little while there was a stir in camp in the way of investigation. But the men in the different departments notified me that several obstacles stood in the way of my hobby for having the journal out "on time." We can not run nights the way we used to do, because there is a law in Ohio making it unlawful for women in this State to work over nine hours a day; and they could not put in green hands, because it is something of a trade to wrap up journals as we do now, without rolling them up.

Well, after I sat up nights to get the journal off on time when the wind did not happen to blow, a steam-engine seemed to be the only thing that would let us out.* Besides the printing-press we were beginning to have orders for hives and frames; and a Bookwalter engine was installed in the basement. That moved the printing-

* Perhaps I should here remark that, besides pumping water, there is one other place where a windmill does very well—grinding grain. After I got the machine in operation I was so anxious to have it doing something nights and Sundays that I put up a little building near by for grinding grain; and with a machine made specially for the purpose I actually succeeded in having it do quite a little useful work during windy days. It made very fair cracked wheat and corn meal and various kinds of ground feed for horses and cattle. As there was no gristmill in Medina at that early date, the farmers soon began to bring in their grain. But right here is where trouble came. Of course every customer wanted to know when he should come after his "grist;" and I set the day far enough ahead so, as I thought, to be sure; but when my little mill got piled full of grain, and the "wind didn't blow," the farmers became disgusted and hauled their grain somewhere else. The arrangement does very well for a farmer to do his own grinding, but he can not do much custom work. Since gasoline has become so safe, cheap, and reliable as a means of power, windmills for such work are practically ruled out.

press at a regular rate of speed, and I could well appreciate the difference between steam power and wind power for running machinery. I need not take space here to tell you that pretty soon a larger engine was needed, then a bigger building down by the railway, half a mile away, where we are now located, and so on and so on. I felt sad to part with the windmill that had given me so much pleasure and satisfaction in climbing all over it to keep it well oiled, etc. What was the use of having a windmill when the steam-engine could do the work ever so much better? One of my good friends at that time, a farmer as well as a beekeeper, offered me twenty colonies of bees for the windmill that originally cost me between two and three hundred dollars. He moved it over to his farm, put it on top of his barn, and used it for running his cutting-box, grinding grain, pumping water, etc. My good friend Ed Blakeslee is dead and gone; but the old windmill stands above the barn, even yet, I suppose because it is less work to let it remain than to take it down. On our front cover we have a picture of it. I urged the boys not to give the picture, because it is such a sad reminder of the days gone by. Its dilapidated appearance makes me think of some old man who has outlived his usefulness.

The second picture, given on page 854, shows the beautiful Blakeslee home to better advantage. On the left you catch a glimpse of a row of basswood-trees. I think the row is about half a mile long. While I was planning my basswood orchard, neighbor Blakeslee, an enthusiastic beekeeper at the time, caught the fever and planted some basswoods. His daughter, Miss Blakeslee, now superintends the farm, but she does not happen to be a beekeeper. She is interested in growing currants and raspberries. You can get a good glimpse of her berry-patch with a white horse following the cultivator between the rows. A new windmill on a modern steel tower rises above their dwelling. In the basement of the barn where the old windmill stands she keeps about 500 White Leghorn hens. They are kept there winter and summer without any yard at all; and with her management their eggs pay for their feed, and have for three or four years, leaving a good big margin for their care and attention.

Windmills are all right for pumping water; but since the advent of gasoline-engines (especially if the supply of gasoline continues to hold out), there is not much use of talking about wind power to drive machinery. With the use of a storage battery it is possible to get a steady speed

from the irregular and fitful blasts of winter and summer wind; but so far as I can learn there are only a few plants that are successfully carried on in this way. With the modern up-to-date windmills that are not only self-governing but self-oiling, the best machines are almost automatic for pumping, and with a very little care and looking-after they will last many years.

"BEWARE OF PICKPOCKETS!" NO. 2.

This time I am going to say something about the old-fashioned way of picking pockets. Come to think about it, I do not know but it is some improvement on the old-fashioned way—that is, an improvement made by the pickers of pockets.

Last winter, among a great lot of beekeepers who called at our Florida home was a great big chap who, I fear, did not enjoy his Florida trip very much, owing to the fact that his pockets were picked of something over \$200 just as he arrived at Jacksonville. I might have taken his name and address, but perhaps he would object to so much publicity. Why I speak of it now is to sound a warning. He said that, just as they arrived at Jacksonville on a crowded train, somebody came along and cried out, "Beware of pickpockets!" Now, this man had been in the habit of carrying his money in an inside pocket; but for some reason that morning he had it in an ordinary pocket. Not long after the warning, "Beware of pickpockets!" the train stopped in the Jacksonville depot. Two men came rushing up the aisle in the car in a big hurry, just as passengers were getting off. One of them called out in a loud voice to his companion a few seats ahead, something like this:

"Bill, we have got the wrong car. Let us get back as quick as we can, or we may get left."

At this his companion turned about and suddenly jostled several individuals in his haste, and together these two managed to make quite a jam and mixup. Now, my friend thinks the whole thing was a put-up job. The man who called out the warning, "Beware of pickpockets," expected that every one who carried money would quickly place his hand on the spot where his roll of bills was placed (*to be sure* it was there), thus giving the thieves the information that he not only had some money, but just where he kept it; and the same man who called out the warning was one of the gang. As soon as my friend discovered that his money was missing he hunted up the police at the depot, and told them that he could identify the men who made the jam. The policeman,

however, quickly told him that that "gag" was worked almost every day; and that as he could not identify the two men who really got the money, they could do nothing.

While the above is literally true, it tends to give Jacksonville a rather bad name; and, in fact, what else could you expect in a city that has pretty nearly a mile of saloons on one straight thoroughfare?

There are several morals right here.

1. Do not think of carrying a hundred dollars, nor even fifty, in your pocket. Carry just what you are going to need from day to day, and have the rest deposited in some safe place.

2. Do not keep any money of any account in a pocket easy of access. I carry what little money I need in an inside vest pocket, and keep my coat buttoned closely over it. Of course, an expert in the trade might get it even then, but I think not without my knowing it.

3. *Keep out of the jam.* These fellows purposely plan jams. If anybody seems inclined to run against you, look out.

My sister, Mrs. Gray, one of the W. C. T. U. women, and one who can not afford to lose her money, was once getting on a train in quite a crowd. A rude fellow bumped against her. Before she could make any remonstrance, however, he was gone, and a little later she found her *money* was gone too; and then she understood why the pickpocket bumped against her in such an ungentlemanly way.

Before closing, just a word about pickpockets who get your money by skillful fraudulent advertising. See the letter below:

I see in your Health Notes of Sept. 15, 1914, that you have been "taken in" as I have been by that woman. I am hard of hearing too, and I bit on glycerine and enserol that cost \$1.05 at Steubenville, Ohio. Now we are going to snow Coxey under, and ballot the saloon out of this State.

Brilliant, Ohio, Oct. 8. S. MILLYSACK.

The little book referred to above, containing the simple story of a poor woman who had "noises" in her ears, should be shut out of the mails; and the men who sent it out, if they can be found, should be promptly punished. And I think, too, that something might be done to stop druggists from keeping and selling much of the advertised medicines after they have *proof* that these are frauds.

DEATH OF T. GREINER, OF LA SALLE, N. Y.

We are just in receipt of a notice of friend Greiner's death, in a brief editorial in the *Practical Farmer*, for which he has been a valued writer for more than twenty years past. Our good friend has been a

regular contributor to quite a number of our best journals on agriculture, horticulture, gardening, etc., almost all his life. His articles have not only been exceedingly practical, but every sentence and line indicated that he was in close touch with the soil every day of his life. His brother, Fr. Greiner, has been a frequent contributor to our columns, and I think Tuscio has been also more or less of a beekeeper all his life. Three valuable articles from Tuscio will be found on pages 483, 568, and 656 for the present year. He and I have had frequent friendly letters for year past—in fact, almost ever since GLEANINGS was started. At first we did not agree very well on religious matters; but as friend Greiner was an ardent friend of temperance we soon got on common ground, and our relations in later years past have been of the most friendly nature. You can imagine how surprised and pained I was to receive last summer the following brief notice. I think there had been some correspondence previous to this in regard to this accident.

Mr. Root:—Radiograph taken of my damaged hip this week shows that I am hurt beyond repair, and shall never be able again to walk naturally or resume my garden work.

T. GREINER.

La Salle, N. Y., July 25.

On the same day the above was received I wrote him as follows:

Now, in regard to your sad condition. I hope it is only that you are unable to walk, and that you have all your other faculties. If so, you can still praise God. I am sure our inventive geniuses can furnish you something that will enable you to get around so you can at least oversee your garden work, and may be you can do it still better if you have more time to plan and arrange things. I suppose you know what Terry said when he was laid up one summer. He said he sat around under the shade trees and made the most profitable season he ever had, just by planning and bossing better.

If you have any means in your place for storing an electric automobile I would suggest a little one as the best thing in the world to get around with. I use mine for running all over town, all over the farm, from my home to the factory, and everywhere I want to go; and it's really a Godsend to me to keep me from getting too tired in walking. May God help you in your affliction.

Medina, O., July 27. A. I. Root.

Almost immediately I received the following:

Mr. A. I. Root:—I thank you from all my heart for the kind letter of July 27, just received, and for your kind and comforting words. I have much to be thankful for, with all my afflictions, for I have all my mental faculties and bodily health, except that break in my one hip bone, and have not missed nor failed to enjoy a meal for many months, perhaps years. I still hope to be of some use and usefulness to some one in this world, and to the world at large, and have an all-abiding faith in the hereafter.

I would thank you for a little more information about that small electric automobile. Who makes them, and what is the approximate cost? I have often wondered why somebody does not make and put on the market a low, small, safe vehicle of this kind calculated for a single passenger.

LaSalle, N. Y., July 29.

T. GREINER.

As I did not know just how he stood in regard to spiritual matters you may imagine how rejoiced I was to hear him say, "I have an all-abiding faith in the hereafter." I hunted up a second-hand automobile, something like my own; but I presume his declining health prevented him from getting it. May God grant that we, each and all, may be able to say, before we cross the dark river that we "have an all-abiding faith in the hereafter."

THE DEFEAT OF INJUSTICE.

In reply to my offer on page 781, Oct. 1, 2000 of the leaflets have been called for (one good brother calling for 500). One good friend writes as follows:

Kindly advise me what the price would be of some printed on heavy white paper in large clear type, and which could be framed if wanted.

MRS. FRANK RASMUSEN.

Greenville, Mich., Oct. 6.

There is no trouble about furnishing these on cardboard large enough to be put in a frame and hung up in the home, providing a sufficient number would care for them in that way. Again, it would be a little more expensive to mail them if put on cardboard without being rolled up or doubled up. If printed, say, on ordinary GLEANINGS paper, the cost would be but little. If put in a frame with glass over it this might answer about as well. If a sufficient number care for it in this way we will have them printed.

Let me say, by the way, that this editorial, taken from the *Sunday School Times*, has been already printed in GLEANINGS three times. At first I was a good deal disappointed to find so few who gave it any particular attention; but it seems to me that from first to last, in view of the many "touchy" people in this world (myself among the number), there is a great and increasing need for something of the kind to be kept constantly before us. We can not get over the idea that we who are followers of the meek and lowly Master do not need to worry, even if somebody does give us an underhanded clip. Some good man or good woman said years ago (I am not sure but it came from the *Sunday School Times*), "No insult can be given where none will be taken."

A MOTHER'S LETTER.

Mr. A. I. Root—This is not a business letter. I felt that I should like to write and say to you that your magazine is very beneficial, and it is a pleasure to learn that you are a Christian man. I have a son just 21 years of age who is trying to learn the

bee business. He subscribed for your magazine, and the reading is very good for him.

He has been a Christian boy, but he is trying to get into business for himself, and I have been afraid he would forget his religion. He owns 30 hives, and is working to get money enough to buy 100. We are not in a financial condition to start him into a business himself. He must work for wages, and the world's influences are great to drag a young man down; so I was much pleased to read your editorial in *Our Homes*. I know it will influence him, as he reads your papers clear through.

MRS. MINNIE GREELEY.

Hanford, Cal., Oct. 14.

Thank you for your kind words, my good friend. In regard to the young man getting money enough to buy a hundred colonies, please tell him for his old friend A. I. Root, not to buy any more bees at all. With his thirty colonies in your mild and genial climate he can build up to a hundred just as fast as he acquires the ability to handle them. In fact, I am inclined to think he had better have only thirty to start with than a whole hundred. If honey is not coming in his locality the year round, enough to keep brood-rearing going, let him buy some sugar or cheap honey, and feed them judiciously.

UNDER THE INFLUENCE OF DRINK, KILLED HIS BLIND WIFE.

We clip the following from *Collier's Weekly* for Oct. 17:

THE MAN WHO MADE MONEY OUT OF IT.

Out in Portland, Ore., one day last month, Oscar Harris, blacksmith, cut a woman's throat. The woman was his wife, and, after killing her, he killed himself. The murdered woman was blind. We quote the *Portland Evening Telegram*:

"Harris had been drinking heavily of late, and was supposed to have attacked his helpless wife while in an alcoholic frenzy. That the wife, who had been blind for some time, put up an unequal struggle against the drink-maddened murderer was apparent from the jumbled confusion of the furniture and from the condition of the woman's face."

This fall Oregon votes dry or wet, and women vote in the election. What will Oregon voters say to the Harris case? What do they think of the man who sold Harris his whisky? and what do we all think of the cozy, respectable distiller of the whisky, who lives on one of the best streets in his town and enjoys the comforts of the civilized State?

Amen to the above. Yet, friends, what do you think of the man who made money by selling the whisky that caused the poor crazy man to fight with, and kill, his poor innocent hard-working blind wife who was tied up to a drunken husband? Can any church-member, in the face of the above, think for a moment of voting wet? If you urge that this is an extreme case, let me refer you to the average daily in our great cities. Reports, substantially the same, are coming in a constant stream where people vote wet.

HIGH-PRESSURE GARDENING

GARDEN-MAKING IN FLORIDA; SEED PEAS, ETC.

I am sure the friends here in the North will excuse me if, during the next few months, I devote quite a little space to gardening in Florida and other southern localities. Just now I want to speak of peas. Every gardener knows that peas do not stand hot weather. If you grow them to advantage in Florida it must be done during the cooler part of the winter. On this account they should be planted some time in November. If you wait until later so they begin to ripen for hot weather in February, March, and April, you will often waste your time and seed. Now, during the last seven years I have made so many failures in growing peas that Mrs. Root says it is no use to try any more. I will tell you some of the difficulties. The seeds that you purchase at this season of the year are mostly old, and probably not true to name. Besides, you will not get it promptly. May be you will now; but in years past my orders for seed peas would be acknowledged, but dealers would say they had not yet received their seed peas; and when I did get the seed it was too late. Besides, the price is often excessive. Just now I notice that the Kilgore Seed Co., of Plant City, Fla., makes a specialty of the popular varieties of seed peas, and their prices are only from 25 to 30 cts. a quart. To demonstrate that their seeds are fresh, and true to name, they have sent me samples with a request that I plant them and report. Our gardening friends will take notice that since parcel post was in force there is quite a saving in postage (as well as getting the seeds promptly) by purchasing of some near-by seed firm.

CANTALOUP MELONS, ETC.

I have so greatly enjoyed home-grown cantaloups in place of apples or with my apples for my five-o'clock supper that I have decided to try hard to grow some cantaloup melons in Florida during the winter. Therefore I am interested in the inclosed advertisement which I saw in the *Florida Grower*, especially as there seemed to be a chance of having melons, more or less, for Christmas or a little later.

CASABA MELON.—Plant now for Christmas market. Excellent shipper. Seeds 25 cts.

Box 55, Bradon, Fla.

For 25 cents I received a little over an ounce of melon seeds, which I thought rather expensive; but the directions on the package in order to grow them for Christmas are what I value most. Here they are:

CASABA MELON; DIRECTIONS FOR GROWING IN FLORIDA.

Plant in the fall, just at the end of the rainy season, in hills eight feet apart. Put four to eight seeds to the hill, and thin out to two plants when started. Plant the seeds $\frac{3}{4}$ of an inch deep, and firm the earth well. Cultivate and fertilize the same as for watermelons or cantaloups. They do best if a shovelful of stable manure is placed in each hill, this covered with about four inches of earth, and the seed planted in this. They will stand about as much frost as cabbage; but if the vines are killed by frost, pull all of the melons, even the half-grown ones, and put them under shelter. They will ripen gradually through the winter. They are ripe when they give easily under pressure.

THE DASHEEN, AND WHAT TO DO JUST BEFORE YOU HAVE REASON TO THINK THERE WILL BE A KILLING FROST.

Mr. Root:—I am taking this opportunity to thank you for the pleasure which I had from the dasheen tubers which you so kindly sent me last spring. They all came up nicely, and had large beautiful leaves, and were about 2 feet high when they were killed by a heavy frost early in September. However, I am going to plant the tubers again next spring.

Gloversville, N. Y., Oct. 12. ALBERT MILLER.

My good friend, I am glad you are pleased with them; but I think you would have been more pleased if you had cut the tops all off the tubers before the damaging frost, and used them for soup. You see every bit of the plant is edible—that is, if you eat them before they get frosted. The tubers under ground are not harmed until there is quite a severe frost; but they should be dug and dried soon after the tops are killed.

MOSQUITO-HAWKS; CLEANING DUCK EGGS, ETC.

I am a man old in years, but in spirit I am young like yourself. By reading *GLEANINGS* I see that you take pleasure in doing many of the same things I do; but I am not a millionaire, and, like yourself, don't want to be nor do I hope to be. I worship and praise the good Lord from day to day; am a strict Prohibitionist and an ardent advocate of woman's rights, including suffrage. I keep chickens and waterfowl, golden Italian bees, and read *GLEANINGS* all through, cover to cover, and am glad when the number is extra large. Now you know me.

I have discovered that the curved end of your hive-tool is a handy thing for scraping the dirt off eggs before wiping them off with the damp cloth, especially Indian Runner eggs, which are very dirty sometimes. You can try this quite easily.

My next suggestion: In last *GLEANINGS* it is said that the "devil's darning-needle" or mosquito-hawk causes great damage to your bees in Florida. Last summer they came at my bees; and a young doctor, an expert rifle shot, took his 22 Winchester and sat down by the hives and just "popped away" at them. He killed many, and they quit coming. There are probably more in your bee localities; but I think if you take a shot gun with smallest shot called "mustard seed," and shoot it into them many would be killed, and the rest would be scared away. I shall try this way if they bother me this summer.

W. H. SISSON.

Magnolia Springs, Ala., July 5.



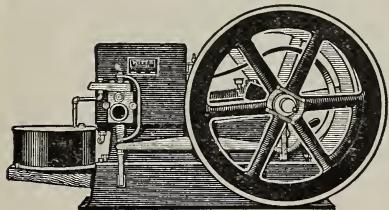
A WITTE

Engine to Earn
its own cost
while you
pay for it!

I AM making lower engine prices than this country has ever seen. And I am delivering engines that can't be beat.

Ed. H. Witte.

WHY take chances on a poor or an unknown engine for any price when the WITTE costs so little and saves you all the risk?



WITTE ENGINES

Kerosene, Gasoline and Gas

Made in sizes of 2, 4, 6, 8, 12, 16 and 22 Horse-power. 25, 30 and 40 H.P. Stationary, Portable, Skidded and Sawrig Styles. Standard the world over for all shop and farm power uses. Over 27 years ago I made my first engine, and gave it my name, and ever since I have kept the active building of every WITTE engine in my own hands. I know every engine I ship, inside and out. That's why I sell every engine under my binding and liberal

Liberal 5-Year Guaranty on Efficiency and Durability

Note These Present Low Prices

2 H.P. \$34.95; 4 H.P. \$69.75; 6 H.P. \$99.35; 8 H.P. \$139.65; 12 H.P. \$219.90; 16 H.P. \$298.80; 22 H.P. \$399.65. Portable and sawrig outfits proportionately low.

SEND COUPON for MY NEW OFFER

Let me send you my Free Book, the finest in the whole engine business. Learn the cost of past high prices, and why I can undersell the whole field, and giving unmatched quality. Let me tell you by return mail, how easily you can earn a WITTE.

Ed. H. Witte, Witte Iron Works Co.
1932 Oakland Avenue, Kansas City, Mo.

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Without obligation on my part, send me, by return mail, free, your New Book; and tell me how easily I can own a WITTE engine.

Name.....

Address.....

\$18.30 PER HORSEPOWER

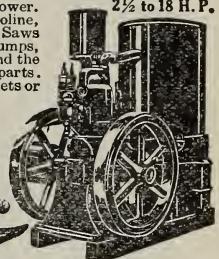
Can you buy a horse for \$18.30? No! Yet you can get a six horsepower

DETROIT FARM ENGINE

2½ to 18 H.P.

for \$18.30 per horsepower. Runs on Kerosene, Gasoline, Alcohol or Distillate. Saves wood, grain feed, pumps, etc., does any job around the farm. Only 3 moving parts. No cams, gears, sprockets or valves. Positive safety action ten year guarantee. 30 day money back trial. We want farmer agents everywhere. Write for particulars.

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Let your \$9.45 BANK HOLD

WHILE YOU TEST THIS STOVE FROM KALAMAZOO

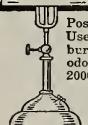
That's one way that you can take advantage of our part payment plan — use the stove 30 days — then decide — we pay the freight and quote a wholesale price that saves you \$5 to \$10. Write for the Kalamazoo Stove Catalogue and take your pick from 500 styles and sizes.



Ask for Catalog
KALAMAZOO STOVE CO.
Manufacturers
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**A Kalamazoo
Trade Mark
Registered
Direct to You!"**

The "BEST" LIGHT



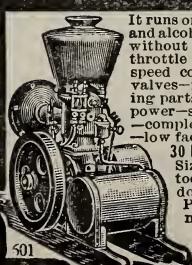
Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorous. Absolutely safe. Over 200 models. 100 to 2000 Candle Power. Full Catalogue. Write for catalog. AGENTS WANTED EVERYWHERE.

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It runs on kerosene (coal oil), gasoline, distillate and alcohol without change in equipment—starts without cranking—runs in either direction—throttle governed—hopper and tank-cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—absolutely the most portable great power—starts easily at forty degrees below zero—complete ready to run—children operate them—low factory prices based on enormous output.

30 Day Money-Back Trial—10 Year Ironclad Guarantee.

Sizes 1 1/2 to 18 horse power. Send a postal today for free catalog which tells how Sandow will be useful to you. No go-betweens. Pocket agent's and middlemen's commissions by dealing direct with factory.

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New KEROSENE LIGHT BEATS ELECTRIC OR GASOLINE

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BURNS
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We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days, then you may return it at our expense if not perfectly satisfied. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at 14 leading Universities show that it

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common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

\$1,000.00 Reward

will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge if there were the slightest doubt as to the merits of the Aladdin? **GET ONE FREE.** We want one user in each locality to whom we can refer customers. To that person we have a special introductory offer to make, under which one lamp is given free. Write quick for our 10-Day Absolutely Free Trial Proposition and learn how to get one free.

MANTLE LAMP COMPANY, 608 Aladdin Building, Chicago, Ill.
Largest Manufacturers and Distributors of Kerosene Mantle Lamps in the World

TWICE THE LIGHT
ON HALF THE OIL

**We Want Men
With Rigs or Autos
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the ALADDIN on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had sold nothing in his life before says "I sold 51 lamps the first seven days." Another says "I disposed of 34 lamps out of 36 within 10 days and a hardware store coining money endorses the Aladdin just as strongly."

No Money Required
We furnish capital required to start business. Ask for our distributor's plan, and learn how to make big money in unoccupied territory.

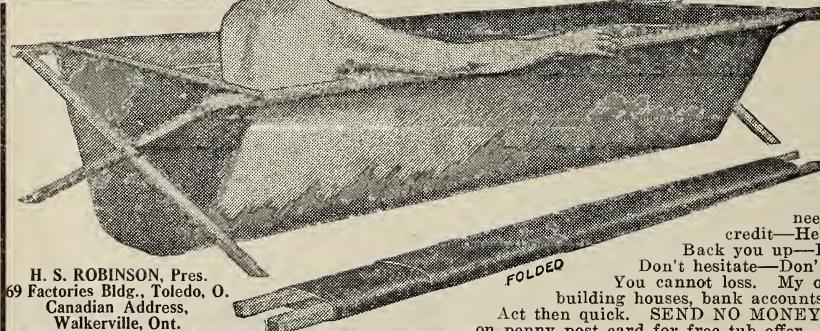
\$60 A WEEK AND EXPENSES

That's the money you should get this year. I mean it. I want County Sales Managers quick, men or women who believe in a square deal, who will go into partnership with me. No experience needed. My folding Bath Tub has taken the country by storm. Solves the bathing problem. No plumbing, no waterworks required. Full length bath in any room. Folds in small roll, handy as an umbrella. I tell you it's great. GREAT! Rivals \$100 bathroom. Now listen! I want you to handle your county. I'll furnish demonstrating tub on liberal plan. I'm positive—absolutely certain—you can get bigger money in a week with me than you ever made in month before—I KNOW IT!

Two Sales a Day --- \$300 a Month

That's what you should get every month. Needed in every home, badly wanted, eagerly bought. Modern bathing facilities for all the people. Take the orders right and left. Quick sales, immense profits. Look at these men. Smith, Ohio, got 18 orders first week; Myers, Wis., \$250 profit first month; Newton, Calif., \$60 in three days. You should do as well. **TWO SALES A DAY MEANS \$300 A MONTH.** The work is very easy, pleasant, permanent, fascinating. It means a business of your own.

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Little capital
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Back you up—Don't doubt—
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You cannot loss. My other men are
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Act them quick. SEND NO MONEY. Just name
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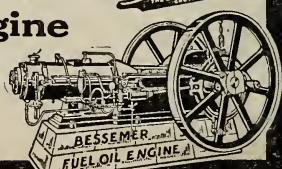
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"Pave for itself in fuel saved!" That is the proud achievement of the Bessemer Kerosene Engine—and that's what interests you! Built to give years of steady service on the lowest operating cost, that's why the Bessemer is displacing other types of engines everywhere. Non-cranking, simple, only three moving parts—a boy or woman can run it. Thousands of Bessemer Kerosene Engines are giving daily service on farms all over the world. 2 to 8 H. P.—30 days free trial. Immediate shipment. Write for Catalog "K". If you require a larger engine, use the



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Lower picture shows the famous Bessemer Fuel Oil Engine. Widely used in irrigation, flour mills, factories, electric light plants, etc. Runs on cheap fuel and crude oils. No batteries or magneto required; ignition is automatic after starting. 15 to 165 H. P. Special Catalog "O" free.



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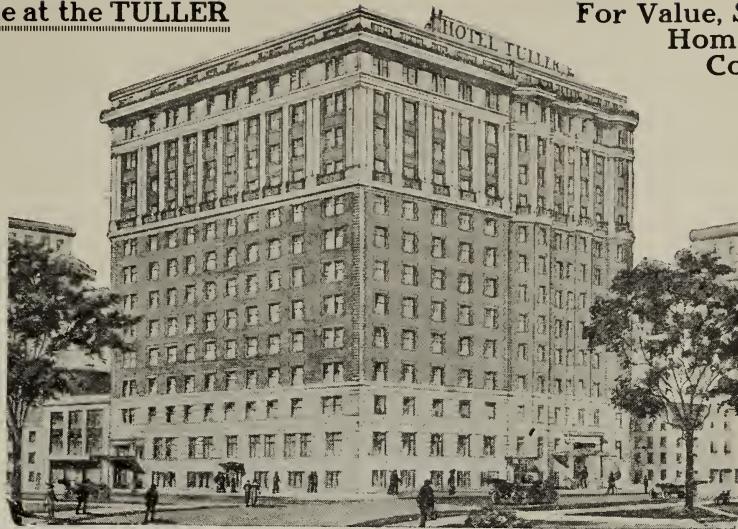
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200 Rooms, Private Bath, \$1.50 Single; \$2.50 up Double	100 Rooms, Private Bath, \$2.50 Single; \$4.00 up Double
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Total 600 outside rooms. Absolutely fireproof. All absolutely quiet.

Two Floors—Agents' Sample Rooms

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THE **KENNARD HOUSE**

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100 Outside Rooms

\$1.00 per Day and Up

European Plan

50 Large Sample Rooms

Handy to Everywhere

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If you wish to honor him, read faithfully the only book he ever wrote, or ever will write unaided by man, **THE GREAT BOOK OF NATURE**.

"A physical fact is as sacred as a moral principle. Our own nature demands from us this double allegiance."—Louis Agassiz.

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Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the Classified Columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

HONEY LABELS.—Lowest prices. Catalog and price list free.
PEARL CARD CO., Clintonville, Ct.

FOR SALE.—Raspberry, basswood; comb and extracted. Write for prices.

W. A. LATSHAW, Clarion, Mich.

COMB HONEY.—No. 1, choice, and No. 2, Colorado standard grades. Carload just in. State quantity wanted. DADANT & SONS, Hamilton, Ill.

FOR SALE.—Comb and extracted honey. Tennessee smoked hams and bacon. Write for prices. J. E. HARRIS, Morristown, Tenn.

FOR SALE.—Light-amber extracted honey in carload lots at 5 cts., by Tulare Co. Beekeepers' Association. C. W. TOMPKINS, Secy., Tulare, Cal.

FOR SALE.—Best quality white-clover extracted honey in 60-lb. cans. State how much you can use, and I will quote price. L. S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Comb honey, 24 4 1/4 x 1 1/2-inch sections, fancy white, \$3.00; No. 1, \$2.80; extracted sweet clover, 7 1/2 cts. in 120-lb. cases, f. o. b. Cochrane, Ala. JOE C. WEAVER.

FOR SALE.—3000 lbs. of white and amber honey, fine quality, in 60-lb. lots, 7 1/2 cts. per pound.

GEORGE RAUCH,
Orange Mountain Bee Farm, Guttenberg, N. J.

Light-amber honey, 9 cts. per lb. California sage honey, 10 cts.; two 60-lb. cans to a case. Sample of either, 10 cts.

I. J. STRINGHAM, 105 Park Place, New York.

FOR SALE.—50,000 pounds light extracted honey, well ripened and mild flavored, 7 1/2 cts. by the case of two sixty-pound cans; in ten-case lots, even seven cents per pound. H. G. QUIRIN, Bellevue, Ohio.

FOR SALE.—Beautiful white-clover-basswood blend of extracted honey in new 60-lb. net tins. Carload or less. Ask for a sample, stating how much you can use.

E. D. TOWNSEND & SONS, Northstar, Mich.

EXTRACTED HONEY.—Best water-white and nice amber alfalfa in 60-lb., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several carloads just in.

DADANT & SONS, Hamilton, Ill.

FOR SALE.—Light-amber extracted honey of excellent quality for table use at only 7 cts. per lb. on car. Well sealed and good body. A sample will convince you. We have five tons of it; and to close it out soon we are offering it at this very close price. In 60-lb. net tin cans, two in a case for shipment. E. D. TOWNSEND & SONS, Northstar, Michigan.

Dealers in honey, ask for a late number of the *Beekeepers' Review* containing a list of 75 members having honey for sale. Address THE BEEKEEPERS' REVIEW, Northstar, Michigan.

HONEY AND WAX WANTED

WANTED.—Comb honey, and beeswax. State what you have and price. J. E. HARRIS, Morristown, Tenn.

WANTED.—Honey, extracted and comb, also beeswax. Will pay full market value. Write us when you have any to dispose of.

HILDRETH & SEGELKEN, New York City.

WANTED.—Comb, extracted honey, and beeswax. R. A. BURNETT & CO., 173 So. Water St., Chicago.

WANTED.—Extracted honey. Send sample and best price. State quantity you have for sale, and how packed. W. HICKOX, Forsyth, Mont.

WANTED.—Buckwheat comb and extracted honey. Comb to be produced in standard sections, where fences or separators have been used. We prefer to have it packed in new shipping-cases of 24 sections each. All sections to be free from propolis, and well graded. Extracted to be heavy in body, of a good flavor, not mixed with other fall honey. We prefer it shipped in new 5-gallon cans or in small barrels. We want early shipments. State cash price for all grades delivered in Medina. THE A. I. ROOT CO.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. HEALY, Mayaguez, Porto Rico.

FOR SALE.—Full line of Root's goods at factory prices. E. M. DUNKEL, Osceola Mills, Pa.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. WHITE MFG. CO., Greenville, Tex.

White-sweet-clover seed, 10,000 pounds unhulled at 12 cts. per lb.; 8000 pounds hulled cleaned seed at 20 cts. per lb.; sacks 25 cts. extra. Immediate shipment. B. F. SMITH, JR., Cowley, Wyo.

"Root" bee supplies and "American" honey-cans always on hand in carload lots. SUPERIOR HONEY CO., Ogden, Utah. (Branch at Idaho Falls, Ida.) Manufacturers of the celebrated "Weed Process" foundation. Highest prices paid for beeswax.

The Beekeepers' Review is now owned and published by the honey-producers themselves. It is the paper that all honey-producers should support. Twenty-one months, beginning with the April, 1914, number, for only \$1.00. Sample copy free. Address THE BEEKEEPERS' REVIEW, Northstar, Mich.

FOR SALE.—We have 50 new ten-frame dovetailed white-pine hives, L. size, 9 1/2 in. deep, empty, no frames, Root make, that we will sell in lots of 25 for \$15. These hive bodies are nailed and painted one coat white paint, and are all ready to put frames in, and which we bought, but did not need this season. J. B. HOLLOPETER, Pentz, Pa.

Oliver typewriter for sale, No. 5 model, with all late improvements; a new machine that has worn only three ribbons. Not a rebuilt typewriter, but a Standard \$100 machine secured direct from the factory. Will sell this machine for \$70 cash, and include metal-cover case free and one month's trial to see that it is as represented. This is a chance to get a \$100 typewriter for less than agents pay for them. This offer will not appear again.

J. B. HOLLOPETER, Pentz, Pa.

REAL ESTATE

FOR SALE CHEAP.—40 acres good irrigated land, also 150 stands bees and extracting-outfit. WM. MCKIBBEN, Ontario, Oregon.

PROFITABLE LITTLE FARMS in Shenandoah Valley of Virginia, 5 and 10 acre tracts, \$250 and up, easy terms; good fruit, vegetable, poultry, and livestock country. Large list of other farms. Send for literature now. F. LABAUME, Agr'l Agt. N. & W. Ry., 246 Arcade Bldg., Roanoke, Va.

DON'T RENT high-priced farm lands up North. Come South and buy the finest in America at \$15 up an acre. Down here you can make an extra crop each year. Dairyman, livestock and poultry raisers are needed at once to supply local demand. Send for Alfalfa booklet, "Southern Field" magazine and land lists. M. V. RICHARDS, Land & Ind. Agt., Southern Ry., Room 27, Washington, D. C.

WANTS AND EXCHANGES

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1914. Our catalog and price list will be mailed to you free. Order early and get the discounts.

C. E. SHRIVER, Boise, Idaho.

BEES AND QUEENS

Bees for rent and sale. OGDEN BEE AND HONEY CO., Ogden, Utah.

FOR SALE.—200 colonies of bees in white tupelo district. Good bargain. J. B. MARSHALL, Big Bend, La.

FOR SALE.—25 stands of bees, low price, if sold at once. MRS. P. H. SCHLEGEL, Killbuck, Ohio.

FOR SALE.—2000 colonies of bees; pure-bred poultry; sweet-clover seed.

W. P. COLLINS, E. C. BIRD, Boulder, Colo.

FOR SALE.—450 colonies of bees, extra hives, supers, and other accessories that go to make a complete up-to-date bee business, all in fine condition.

H. B. HETHERINGTON, Cherry Valley, N. Y.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1.00; 6 for \$5.50. WM. S. BARNETT, Barnett's, Va.

Golden Italian queens that produce golden bees, the brightest kind, gentle, and as good honey-gatherers as can be found. Each, \$1.00; six, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.

J. B. BROCKWELL, Barnett's, Va.

California Italian queens, goldens and three-banded. Bees by the pound a specialty; also nuclei and full colonies. Orders booked now for the early spring months. Circular free. J. E. WING, 155 Schiele Ave., San Jose, Cal.

FOR SALE.—1000 colonies of bees in 10 apiaries, in the heart of Imperial Valley, where failure is unknown. Profits have averaged more than 100 per cent on investment for five years. Guaranteed free from disease. Will sell any number.

J. EDGAR ROSS, Brawley, Cal.

FOR SALE.—110 colonies of bees in new ten-frame hives on Hoffman frames; full sheets of foundation wired, and complete set of extracting-supers with comb; 100 queen-excluders, 25 Porter bee-escapes, feeder, extractor, 500 extra frames, and foundation for same, etc. No disease.

M. E. EGGERS, Rt. 1, Eau Clare, Wis.

FOR SALE.—Three-banded Italian queens, from the best honey-gathering strains, that are hardy and gentle. Unested queens, 75 cts.; 6, \$4.23; 12, \$8.00; tested queens, \$1.25; 6, \$7.00; 12, \$12.00. Selected queens, add 25 cts. each to above prices. Breeding queens, \$3.00 to \$5.00 each. For queens in larger quantities, write for prices and circulars.

ROBERT B. SPICER, Wharton, N. J.

MUSIC

A SONG OF MOTHER AND HOME. The most famous Song of Home ever written. It will remind us that our lives, like the sands in the hour-glass, which run so swiftly, are rapidly drawing to a close. Those who sing or listen to this song will surely gain an inspiration to think more of the life beyond. Regular price 50 cts. Special Christmas offer, 30 cts. Send 15 2-cent stamps and you will receive a copy by return mail. BOSTON VOCAL ART CLUB, Dept. E, 178a Tremont St., Boston, Mass.

POULTRY

As I had the highest-scoring R. C. B. Leghorn in the Hudson poultry show I will sell a fine lot of R. C. B. Leghorn cockerels for \$1.00, \$2.00, \$3.00, and a very fine one for \$5.00.

GEORGE J. FRIESS, Hudson, Mich.

EGG STOCK.—Pure-bred pedigreed Barred Rock cockerels and hens. Mothers laid over 200 eggs in 10 months. Sires have 15 years of pedigree breeding for eggs behind them. Grandmother laid 217 eggs in third year of production. Pen of my hens stand eighth among 100 pens in Missouri Egg-laying Contest. Eggs in season. Speak quick.

B. F. W. THORPE,
358 S. Yellow Springs St., Springfield, Ohio.

MISCELLANEOUS

FOR SALE.—One 22-cal. Winchester repeater rifle, \$6.50; Wizard "Sr." camera, 4 x 5, \$10.00; Indian motorcycle, 7 H.P. twin cylinder, \$175.00. Run only 500 miles. A. B. CRANE, Carmel, N. Y.

Beepkeepers, Attention.—The L. & H. Apiaries, Clarkston, Mich., can supply you with extra good ripe eating potatoes at 1 ct. per lb. in lots of from 100 to 500 lbs. F. O. B. Clarkston Station. Order quick. L. & H. APIARIES.

\$\$\$\$ IN PIGEONS! Start raising squabs for market or breeding purposes. Make big profits with my Jumbo pigeons. We teach you Large, free, illustrated, instructive circulars. PROVIDENCE SQUAB CO., Providence, R. I.

SITUATION WANTED

WANTED.—A sober young man who has had experience, a position in beeyard for the season of 1915.

ALEX. ELWOOD, Walton, N. Y.

HELP WANTED

WANTED.—Married man to do trucking in Florida this winter. STEEN FREEMAN, Wamsley, Ohio.

BEEKEEPERS' DIRECTORY

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York.

Nutmeg Italian queens, leather color, after June 1, \$1.00 by return mail. A. W. YATES, Hartford, Ct.

QUEENS.—Improved red-clover Italians bred for business June 1 to Nov. 15, untested queens, 75 cts. each; dozen, \$8.00; select, \$1.00 each; dozen, \$10; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.

The results from my want ad. in your journal were great.

Walton, N. Y.

ALEX. ELWOOD.

I should not like to be without GLEANINGS, although I have no bees, and never expect to have. It is surely worth all you ask for it, and I am sure I would not be without it for the price a dozen times over. Of course I care more for the Our Homes and Temperance; but it is all good, and I can say for one that I read every thing in it.

Kaycee, Wyo., Aug. 9.

MRS. J. J. READ

Convention Notices

The Wisconsin Beekeepers' Association will meet in Madison, Wis., Nov. 24-25. A complete program will appear later.

Augusta, Wis., Oct. 13. GUS DITTMER, Sec.

The annual session of the Indiana Beekeepers' Association will be held in the Statehouse, Indianapolis, Nov. 16 and 17. Dr. E. F. Phillips and other prominent speakers will be with us. All are invited.

GEO. W. WILLIAMS, Sec.

Redkey, Ind.

The twenty-fourth annual meeting of the Illinois State Beekeepers' Association will be held at the State House, Thursday and Friday, Nov. 19 and 20. Hon. N. E. France of Wisconsin, will be with us. His subject will be "Short Cuts." Prof. J. G. Mosier, University of Illinois, will speak on "Sweet Clover." Mr. C. P. Dadant, of Hamilton, Ill., and Dr. E. F. Phillips, of Washington, will speak on "Temperature and Moisture of the Hive in Winter." Come prepared to help make it a good meeting.

Springfield, Ill. JAS. A. STONE, Sec.

There will be a meeting at Akron, Erie Co., N. Y., on Tuesday, Dec. 15, 1914, at the American Hotel, commencing at 10:30 A. M., and closing at 3:30. Some of the best beekeepers in western New York will be there to speak. There will also be other discussions on bee culture. This meeting, coming soon after the Syracuse meeting, will give those residing in western New York a chance to learn the latest in beekeeping, and also a chance to form a branch of the N. B. K. A. Akron is well situated, being but 20 miles east of Buffalo. It has good railroad accommodations and two State improved highways. The American Hotel is an ideal place for such a meeting, offering first-class accommodations at a reasonable rate. The large hall is free to all. Come and get acquainted; learn something new; see what the other fellow is doing; get together, talk it over; have a good time—take a day off. It will pay you in the end.

THE CHICAGO NORTHWESTERN BEEKEEPERS' ASSOCIATION.

The eighteenth annual meeting of the Chicago Northwestern Beekeepers' Association will be held at the Great Northern Hotel, Thursday and Friday, December 17 and 18. An extensive program has been arranged; and as several large beekeepers, such as N. E. France, E. S. Miller, and others have signified their intention of being present, a good meeting is assured. The program follows:

THURSDAY A. M., DECEMBER 17.

- 8:00. Social hour.
- 10:00. President's Address, C. F. Kannenberg.
- 10:30. Reading of minutes and report of Secretary-treasurer;
- 11:00. American Beekeeping, Past and Future, L. A. Aspinwall.
Crop reports.
AFTERNOON SESSION.
- 1:00. Shipping Bees North and South, H. C. Ahlers.
- 2:00. Country-wide Advertising to Increase the Sale of Honey, G. E. Bacon.
- 3:00. Report of Delegate to National Convention, E. J. Baxter.
- 4:00. Bee-cellars, E. S. Miller.
Question-box.

THURSDAY EVENING.

Sweet Clover, Prof. J. G. Mosier, University of Illinois.

FRIDAY A. M.

- 9:00. Social hour.
- 10:00. The High Price of Sugar and the Honey Market, F. C. Pellett.
- 11:00. The Foul-brood Problem, N. E. France.
AFTERNOON SESSION.
- 1:00. Relation of Bees to Horticulture, Prof. F. E. Millen, Ass't Prof. of Agriculture.
- 2:30. Brood-rearing for Crop Results, E. L. Hofman.
- 3:30. Comb Honey—Preparing for the Crop, A. L. Kildow.
- 4:00. Beekeeping as a Business, E. H. Bruner.

The annual convention of the Ontario Beekeepers' Association will be held in the York County Council Chambers, 57 Adelaide Street East, Toronto, November 11, 12, and 13.

All beekeepers in Ontario, and those from other provinces who can make it convenient, are cordially invited to attend. The executive also extends a cordial invitation to beekeepers of adjoining States of the Union to be present at this annual gathering of Ontario beekeepers.

It will be seen by the program that there are not as many set subjects this year as usual. We have always found that, to give time for discussions, our programs have been too full, and important questions in the question-boxes have had to be left over to be answered in the bee-journals. The effort this year is to give more time than usual to the question-box, which forms such an important part of the program of any beekeepers' convention.

The following is the program:

TUESDAY EVENING, 7:30.

Meeting of Officers and Directors.

WEDNESDAY MORNING, NOV. 11, 9:30.

Minutes.—Morley Pettit, Guelph, Secretary-Treasurer.

President's Address.—J. L. Byer, Markham.
First Vice-president's Reply.—F. W. Krouse, Guelph.

Second Vice-president's Reply.—Jas. Armstrong, Cheapside.

Experiences of the season of 1914.—O. L. Herisher, Kenmore, N. Y.

Discussion.—Jno. A. Lunn, Fingal.

WEDNESDAY, 2:00 P. M.

Specializing in Beekeeping—Its Advantages and Disadvantages.—W. A. Chrysler, Chatham.

Discussion.—F. W. Krouse, Guelph.

Report of Apiary Inspection for the Season.—Morley Pettit, Guelph.

Question-box.—Jno. A. McKinnon, St. Eugene.

THURSDAY, 9:30 A. M.

Putting Up a Honey Exhibit.—H. G. Sibbald, Toronto.

Question-box.—J. F. Dunn, Ridgeway.

THURSDAY, 2:00 P. M.

Address.—W. Bert Roadhouse, Deputy Minister of Agriculture, Toronto.

Election of Officers.

Reports of directors, treasurer, honey-crop committee, representatives to exhibitions.

FRIDAY, 9:30 A. M.

Sweet clover, its Culture and Uses.—Wm. Linton, Aurora.

Good Combs and How to Obtain Them.—Geo. F. Kingsmill, B.S.A., Assistant Apriarist Central Experimental Farm, Ottawa.

Discussion.—J. D. Evans, Islington.

FRIDAY, 2:00 P. M.

Question-box, Wm. Couse, Streetsville.

Simple Method of Rearing and Introducing Queens.—F. W. L. Sladen, Apriarist, Central Experimental Farm, Ottawa.

The third annual convention of the Iowa Beekeepers' Association will be held at Agricultural College, Ames, Iowa, November 17, 18, 19, 1914, in connection with short course in apiculture and hive products. The following is the program:

Tuesday, 10:00 A. M., Welcome and Response; Address of President, Frank C. Pellett, Atlantic; Report of Secretary, S. W. Snyder, Center Point; Report of Treasurer, C. H. True, Edgewood; Appointment of Committees.

1:30 P. M.—Short-course demonstrations in charge of C. E. Bartholomew, Professor of Apiculture, Iowa College of Agriculture.

7:30 P. M.—History of Beekeeping, C. P. Dadant, Editor *American Bee Journal*; Honey Flora of Iowa and Nectar Secretion, Dr. L. H. Pammel, Ames; Beekeeping in the Inter-mountain Region (illustrated), Wesley Foster, Boulder, Col.

Wednesday, 9:00 A. M.—Fifty Years of Beekeeping in Iowa, F. Kretchmer, Council Bluffs. Temperature and Moisture of the Hive in Winter, Dr. E. F. Phillips, Washington, D. C. Wintering Bees in Iowa, W. S. Pangburn, Center Junction. Experience with European Foul Brood, J. I. Wiltsie, Arlington. Discussion led by L. W. Elmore, Fairfield. Experience with American Foul Brood, D. E. Lhomiedieu, Colo, Iowa. Discussion, led by J. W. Stine, Salmen.

1:30 P. M.—Short-course demonstrations.

7:30 P. M.—Individual and Co-operative Methods of Marketing Honey, Wesley Foster, Boulder, Colo. Discussion, led by P. J. Doll, Minneapolis, Minn. Modern Short Cuts in Beekeeping, N. E. France, Platteville, Wis. Subject to be announced, Dr. L. D. Leonard, Minneapolis. Moving pictures of the bee.

The domestic science department of the college will entertain the ladies present on Wednesday afternoon.

Thursday, 9:00 A. M.—Wild bees of Iowa in their relation to plant pollination, L. A. Kenoyer, Toledo. What the Agricultural College can do for the bee-keeper, Prof. Francis Jager, University of Minnesota. Reports of committees, election of officers.

1:30 P. M.—Short-course demonstrations.

OFFICERS FOR 1914.

President, Frank C. Pellet, Atlantic; Vice-president, J. W. Sine, Salem; Secretary, S. W. Snyder, Center Point; Treasurer, C. H. True, Edgewood.

DIRECTORS.

E. C. Wheeler, Marshalltown; Dr. A. F. Bonney, Buck Grove; Hamlin B. Miller, Marshalltown.

Every beekeeper is urged to bring some samples of his product for exhibition. No premium list can be offered in advance; but the committee on awards will make such a disposition of the funds available as seems equitable. But small cash fund is available this year; but we hope for such a creditable exhibit as will enable the association to arrange a liberal premium list in connection with next year's convention.

A large display of supplies of standard makes will be on exhibition as well as many new specialties, and beekeepers will have an opportunity to see for themselves what value there is in the new offerings.

It is expected that prominent queen-breeders will also exhibit. The following supply dealers have already signified their intention of placing some of their goods on display:

A. L. Root Co., Medina, Ohio; Dadant & Sons, Hamilton, Ill.; Kretschmer Manufacturing Co., Council Bluffs, Iowa; Minnesota Bee Supply Co., Minneapolis.

SPECIAL NOTICES

BY A. L. ROOT

SHALL OHIO BE DRY?

Just now, Oct. 26, our printing-office informs me that they can get this issue into the hands of our Ohio readers before election day, Nov. 3, if it gets on the press immediately. Now, with the present outlook there may be a very narrow margin between wet and dry. In fact, it is among the possibilities that a single vote may determine whether Ohio shall be "dry land" from the Ohio River (Cincinnati) to Lake Erie (Cleveland). In view of this, will not the Ohio friends of temperance and righteousness make just one more effort to get one more dry vote before the chance is gone? And while we work, let us pray for the dear children coming after us, if not for ourselves, that the liquor element may not conquer us. Who knows but that, in God's loving providence, this little bit of paper on which your eyes are now resting may not turn the scale, as the little scrap of paper that I found in that shoeshop long ago, amid the bits of leather, turned the scale?

Remember it was only a little pebble that killed Goliath and caused the rout of the Philistines. Now keep in mind, friends, that if you get only one more vote you may be the David who slew the giant of Intemperance.

AN ADDRESSED POSTAL CARD.

While in my Florida home for the coming winter I do not expect to have a stenographer nor a typewriter; but notwithstanding this you may write me just as many letters as you please, and I will try to read them all, even the long letters, especially if you use pen and ink, or a pencil that marks *black*. It wears on my nerves to try to read faint pencil-marks. I suppose this is because I have done so much of it all my life; and it wears on my nerves still more to try to decipher the name of the good friend who writes me and who, furthermore, makes me run all over his letter to find out where he lives. On this account it will save me much time, trouble, and worry if you will be sure to inclose an address-

ed postal card. With a good fountain pen I can write quite a letter on a postal card; and if all I have to do is just to write on that postal card without bothering about names or addresses, it is an easy matter. I do not want any postage-stamps. In fact, I would not ask you to invest in a postal card if it were not for the sake of getting your name and address. You probably know your own name—most people do; and you know how to write it so your own postmaster can make it out; and I think you can tell *where you live* better than anybody else can. If you do not make it plain enough so that Uncle Sam's clerks can get it to you, the responsibility rests on your shoulders and not on mine. I do not like stamped envelopes for several reasons. I often drop or lose them. Then when you send me an envelope you probably expect a letter instead of what I can write on a postal. If your questions are of general interest, and you are in no great hurry, I prefer to answer them through *GLEANINGS*.

Now, please do not think I am complaining because I have so many friends; and do not think I dislike to be bothered with correspondence. I like to hear from folks from all over the world. It is my food and drink. I could not write the Home papers that have brought so many kind words if I did not have such a vast array of helpers to keep letting me know what is going on in this world of ours.

INSECT PESTS, AND HOW TO FIGHT THEM.

The above is the title of a Government bulletin containing a list of all the leaflets and bulletins that have been published in regard to insect pests. And, by the way, I have been wondering how many of our friends are availing themselves of these very valuable bulletins, not only in regard to insect pests but other things. For years past, whenever I have run up against some insect foe, and wanted to know more about it, on applying to the Department of Agriculture I have always received the fullest information, and most of the time this has been accompanied by some bulletin written by some able man. In fact, every thing that bothers the farmer from the various weevils to rats and mice, if you apply to the Department of Agriculture you are sure to get very valuable information. Now, it may surprise you to know that over 1900 bulletins have been published in regard to insect pests. In consequence of the enormous expense of printing so many bulletins, instead of their being given away as formerly, a price of from 5 to 15 cents, according to the number of pages, etc., is charged. When I was writing up my article on "rebdugs," sometimes called "chiggers," down in Florida, I not only received bulletins but letters from the ablest entomologists in our land in regard to the matter. Well, this list of bulletins on insects is, as I understand it, furnished free of charge. Just ask for price list 41, fifth edition, and then you have an alphabetical list of the bulletins from A clear down to Y.

What particularly interests beekeepers are the bulletins on bees, and of these I was surprised to find there are over 20. Below is a list with prices.

Anatomy of the honeybee. 1910. 162 pages, illustrated. Paper, 20c.

Bee diseases in Massachusetts. 1908. Pages 23 to 32, map. Paper, 5c.

Beekeeping in Massachusetts. 1909. Pages 81 to 109, illustrated. Paper, 5c.

Bees (with list of publications of Department of Agriculture on beekeeping). 1911. 48 pages, illustrated. Paper, 5c.

Behavior of honeybee in pollen-collecting. 1912. 36 pages, illustrated. Paper, 5c.

Brief survey of Hawaiian beekeeping. 1909. Pages 43 to 58, illustrated, map. Paper, 15c.

Destruction of germs of infectious bee diseases by heating. 1914. 8 pages. Paper, 5c.

(This paper is of interest to beekeepers in all parts of the United States. It was read before the New York State Beekeepers' Association, February 10, 1914, at Ithaca, N. Y.)

Historical notes on causes of bee diseases. 1912. 96 pages. Paper, 10c.

Manipulation of wax scales on honeybee. 1912. 13 pages, illustrated. Paper, 5c.

Miscellaneous papers on apiculture. 1911. 7 parts, 123 pages, illustrated, maps. Paper, 30c.

Names applied to bees of genus *Osmia*, found in North America. Cloth, 90c.

Bee diseases in United States, preliminary report. 1911. 25 pages. Paper, 5c.

Porto Rican beekeeping. 1914. 24 pages, illustrated. Paper, 5c.

Rearing of queen-bees. 1905. 32 pages, illustrated. Paper, 5c.

Relation of etiology (or) cause of bee diseases to treatment. 1908. Pages 33 to 42. Paper, 5c.

Report of meeting of inspectors of apariaries, San Antonio, Tex., Nov. 12, 1906. 79 pages, 1 plate. Paper, 15c.

Sacbrood, disease of bees. 1913. 5 pages. Paper, 5c.

Status of apiculture in United States. 1909. Pages 59 to 80. Paper, 5c.

Temperature of bee colony. 1914. 29 pages, illustrated. Paper, 5c.

A study of the effect of temperature on bees.)

Temperature of honeybee cluster in winter. 1914. 16 pages, illustrated. Paper, 5c.

This bulletin presents studies of bees as affected by temperature conditions during winter, and is of special interest to beekeepers in the North.

Treatment of bee diseases. 1911. 22 pages, illustrated. Paper, 5c.

Besides this there are two on honey; one on comb honey, of 7 pages, 5 cts. Another is on the production and care of extracted honey and methods of testing honey—18 pages, 5 cts.; two on foul brood, 5 cts. each, including the laws relative to foul brood.

It is really worth while to know how many different forms of insect pests have been studied and classified, and exhaustive experiments made in regard to the best method of conquering them.

I know there has been some criticism in regard to the amount of money expended at the Government Printing-office for pamphlets and bulletins, stacked up there at Washington, and never used. But the fault is largely because the people of the United States do not avail themselves of these valuable helps. A single insect often damages or destroys crops whose value amounts up into the millions, while the wideawake farmer who is in touch with these bulletins, and in touch with the experiment stations of his own State, will often succeed in getting a crop when others fail and the price is away up. I think it will pay almost every reader of GLEANINGS to have this list describing the bulletins, giving the price, etc. Accompanying the above is a little pamphlet of 12 pages, entitled "The Government Bookstore." This should be read carefully by those who have seen fit or felt inclined to criticise the Government Printing-office.

SPECIAL NOTICES

BY OUR BUSINESS MANAGER.

SWEET-CLOVER SEED.

We are now provided with a fair stock of new hulled white-sweet-clover seed and some choice last year's seed in other varieties which we offer at the following prices:

	Prices in lots of	1 lb.	10 lb.	25 lb.	100 lb.
White sweet clover, unh'd	.20	\$1.80	\$4.25	\$16.00	
<i>Melilotus alba</i> , biennial					
White sweet clover, hulled	.26	2.40	5.75	22.00	
Yellow sweet clover, unh'd	.20	1.80	4.25	16.00	
<i>Melilotus officinalis</i> , bien.					
Yellow sweet clover, hulled	.26	2.40	5.75	22.00	
Yellow sweet clover08	.60	1.25	4.00	
<i>Melilotus Indica</i> , annual (hulled old seed).					

FIVE PER CENT DISCOUNT FOR NOVEMBER CASH ORDERS.

To those who buy now for next season, sending remittance with the order during the month of November subject to the conditions named below, we allow 5 per cent discount.

This discount will apply on all articles listed in our regular catalog at current corrected prices to date except as follows:

Tinned wire, paint, Bingham smokers, Porter bee-escapes, glass and tin honey-packages, scales, bees and queens, bee-books, papers, labels, printed matter, bushel boxes, seeds, and specialties not listed in our general catalog. Where any or all of these articles in a general order do not exceed fifteen per cent of the whole order, the discount may be deducted from the whole order, including these items which are otherwise excepted.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF GLEANINGS IN BEE CULTURE, PUBLISHED SEMI-MONTHLY AT MEDINA, OHIO, REQUIRED BY THE ACT OF AUGUST 24, 1912.

Editor E. R. Root, Medina, Ohio; Managing Editor, H. H. Root, Medina, Ohio; Business Manager, J. T. Calvert, Medina, Ohio; Publisher, The A. I. Root Co., Medina, Ohio.

Owners: The A. I. Root Co. Stockholders holding 1 per cent or more stock as follows:

A. I. Root, Medina, Ohio; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; Susan Root, Medina, Ohio; J. T. Calvert, Medina, Ohio; A. L. Boyden, Medina, Ohio; L. W. Boyden, Medina, Ohio; A. A. Bostwick, Seville, Ohio; Mrs. C. W. Geckler, Valley City, Ohio; P. W. Himelsbaugh, Mallet Creek, Ohio; Thos. Shaw, Medina, Ohio; Frank Spellman, Medina, Ohio; R. W. Turner, Medina, Ohio.

There are no bondholders, mortgagees, nor other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities.

(Signed) E. R. ROOT.

Sworn to and subscribed before me this 6th day of October, 1914.

(Signed) FRANK SPELLMAN.
[Seal.]
(My commission expires Feb. 17, 1917.)

THE CHRISTMAS THOUGHT.

Ideas on Christmas giving are rapidly changing among the sensible. Those who think as they give are looking for a year-round service as the important thing.

In a week of shopping, with all its strain, you will not find a better gift than a year's subscription to *The Youth's Companion*. It offers its service, its clean entertainment, its fine suggestiveness week after week; and the end of the year, which finds many a gift in the attic, dust-covered and forgotten, The *Companion* again, with all the charm of last Christmaste.

No American monthly at any price offers the same amount of reading, and none can offer better quality. Less than four cents a week provides this best of Christmas gifts—\$2.00 a year. If you subscribe now, all the remaining issues of the year will be sent free, and The Companion Home Calendar. A copy of the Calendar is also sent to those who make a gift subscription. Send for sample copies, and the Forecast for 1915.

THE YOUTH'S COMPANION,
144 Berkeley Street, Boston, Mass.
New Subscriptions Received at this Office.

ONLY PART PAYMENT FOR TRIAL.

The Kalamazoo Stove Company has the reputation for granting more privileges than any other stove concern in the world. When they first offered the 30-days' trial privilege, people could hardly understand it. To have the use of a stove for 30 days before deciding to buy it was unheard of. To try it you must first build a fire in it—and after a fire was burned in it, the stove would no longer be brand new. More than that, the Kalamazoo Company paid the freight going out and would pay it again coming back if the stove was returned.

So a stove that failed to sell itself would leave them with practically a second-hand stove on their hands and in addition they would have spent several dollars in freight charges.

Therefore it was obvious that they had extreme confidence in their product. And that confidence proved to be not far fetched, for the stoves did not come back. In this respect every stove was *bought—not sold* for there was no one there to sell it.

Now this year they are going one further. You do not even have to deposit the price of the stove to get the free trial. Simply a small first payment, or just about enough to show your interest is all that's needed, and even that, if you choose, can be deposited in your local bank in their name and held there until the trial has expired. All of which proves that the Kalamazoo people must offer a remarkably good proposition and more than just a good big saving in price.

THE BOOK OF WONDERS

A Premium for New Subscriptions to
GLEANINGS in BEE CULTURE

The Book of Wonders contains 603 pages, is printed on good paper, and is illustrated with hundreds of interesting and educational pictures.

The story of every industry and process of manufacture is interesting to one not acquainted with it. This book is remarkable in the way these stories have been collected, for The Book of Wonders gives numerous topics of this kind, devoting several pages to each, as, for example, The Parts of a Big Gun, The Story in the Telephone, The Story in a Suit of Clothes, The Story in a Yard of Silk, The Story in a Lump of Sugar, The Story in a Tunnel, The Story of Submarine Boats. About fifty of the inventions of man are explained in this series of "Stories."

Scattered through the book are hundreds of answers to those queries which we all make, yet which are so hard to explain, as "What makes the colors of sunset?" "How do birds find their way?"

Hustle for Subscriptions

Send two new yearly subscriptions to Gleanings with remittance of \$2.00 and you will be entitled to a copy of The Book of Wonders.

OR

Send eight new subscriptions to Gleanings for six months each, at special rate of 25c each, \$2.00 in all, and you will be entitled to a copy of this book.

Canadian postage 30c extra on each yearly subscription.
 Canadian postage 15c extra on each six months' subscription.
 Foreign postage 60c extra on each yearly subscription.
 Foreign postage 30c extra on each trial subscription



The A. I. Root Company
 Medina, Ohio

The Best Time to buy Supplies

Early-order cash discounts apply here just as they do at the factory. We give exactly the same discount that is granted by the manufacturers of these famous goods, and the prices in our special catalog are the same as their own. There is a special saving in ordering from us—**FREIGHT**. Better give this careful consideration before sending elsewhere.

THE CASH DISCOUNT ON EARLY ORDERS
PLACED DURING THE MONTH OF NOVEMBER
IS 5 PER CENT.

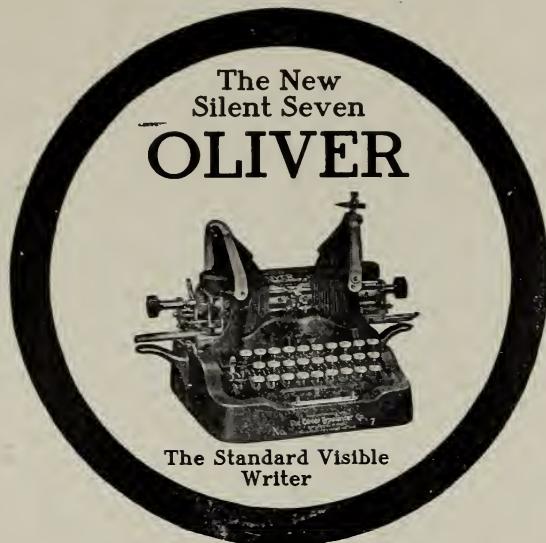
As usual we have a large and complete stock on hand, which places us in a position to take care of your orders promptly. By ordering now you will receive your goods promptly, avoiding the rush in the spring, and you can put them together in your spare time, thereby saving extra expense when you are badly in need of them.

WEED'S NEW-PROCESS COMB FOUNDATION

We have a big demand for this product, and are turning out comb foundation of unexcelled quality. Include what you will need for the opening of next season in your early order, and the same will be held subject to your convenience if desired; but get your order in now and save five per cent.

Toepperwein & Mayfield Co.

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